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THE

MEDICO-CHIRURGICAL REVIEW,

AND

JOURNAL

OF

PRACTICAL MEDICINE.

(NEW SERIES.)

VOLUME THIRTY-EIGHT,

[1st of OCTOBER, 1842, to 31st of MARCH,]

1843.

VOL. XVIII. of DECENNIAL SERIES.

EDITED

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THE

Medico-Chirurgical Review,

No. LXXV.

[NO. 35 OF A DECENNIAL SERIES.]

OCTOBER 1, 1842, TO JANUARY 1, 1843.

MEDICO-CHIRURGICAL TRANSACTIONS, Published by the Royal Medical and Chirurgical Society of London. Volume XXV. London. Longman and Co. 1842.

THE present volume of the Society's Transactions is not distinguished by any elaborate contribution, but contains a large number of valuable cases, and many interesting observations. The Society, indeed, is daily growing in usefulness and reputation. Like Aaron's wand, it has swallowed up its rivals, and the other medical societies of London are fast disappearing from its side. Admitting discussions as well as publishing papers, comprising within its ranks all that is distinguished and honourable in the Profession, it has attracted to itself talent as well as numbers, and is now sailing on a full tide of popularity and success. Long may it do so.

The Contents of the volume before us are as follows:—

1. Case of cyanosis, depending upon transposition of the aorta and pulmonary artery; by W. H. Walshe, M. D. Communicated by John Forbes, M. D.—2. Case of aneurism of the ascending aorta, bursting into the right ventricle; with a communication between the two ventricles; by Thomas S. Beck. Communicated by Robert Lee, M. D.—3 On the structure and functions of the human placenta; by John Dalrymple, Esq.—4. On the relation between the symmetry and the diseases of the body; by James Paget, Esq.—5. An account of a case of extensive disease of the pancreas; by J. A. Wilson, M. D.—6. Remarks on typhus fever; by John Bostock, M. D.—7. Cases of laryngitis, relieved by operation; by John Wilson, M. D.—8. Peculiar symptoms affecting an entire family, and terminating in death; by the same.—9. A case of congenital cataract, where sight was acquired by operation, at the age of twenty-three years; by R. A. Stafford Esq.—10. On diseases which affect corresponding parts of the body in a symmetrical manner; by William Budd, M. D.—11. Notice of cases of plague contracted in the Lazzeretto of Constantinople in a letter addressed to Dr. Davy; by M. Antoine Pezzoni. With Remarks by Dr. Davy. Communicated by Thomas Hodgkin, M. D.—12. Observations on tubercle of the brain in children, with a tabular view of thirty cases of the affection; by P. Hennis Green, M. D. Communicated by Dr. Burgess. —13. Case of *local tubercular deposit* upon the surface of the brain; by

Robert Dunn, Esq.—14. A case of stricture of the trachea; by W. C. Worthington, Esq. Communicated by James Copland, M. D.—15. History of a remarkable case of tumours, developed on the head and face; accompanied with a similar disease in the abdomen; by Henry Ancell.—16. Account of a case of irregular formation of the heart, accompanied with a supernumerary valve in the pulmonary artery; by Theophilus Thompson, M. D.—17. Notes of a case of petechial cow-pox, with observations on the development of the hæmorrhagic diathesis; by George Gregory, M. D. —18. On acute ulceration of the duodenum, in cases of burn; by T. B. Curling, Esq.—19. Cases of malformation of the heart; by T. B. E. Fletcher, M. D. Communicated by Richard Partridge, Esq.—20. Observations on a particular form of encysted tumour, which occurs in the neck, but is not necessarily connected with the thyroid body; by Benjamin Philips, F. R. S.

We shall take these Papers in succession.

1. CASE OF CYANOSIS, DEPENDING UPON TRANSPOSITION OF THE AORTA AND PULMONARY ARTERY. By *W. H. Walshe*, M. D.

Dr. Walshe was prevented from learning much of the state of the child during life. The following are the particulars of the case.

Case.—Dr. W. saw the child, a male, aged ten months, decrepit, in a paroxysm of frequent but not periodical occurrence. In such a fit, the child died two days afterwards, death being hastened by slight diarrhœa and pulmonary catarrh.

"The skin is of deeply leaden colour, particularly at the toes and extremities of the fingers: the surface feels cool, and the infant appears to suffer from chilliness. The leaden discolouration of the face is general, but particularly deep at the upper lip and both internal canthi: no particular pulsation in these situations. The infant throws about its arms constantly, and is much agitated; the eyes appear prominent and their expression staring; respiration very frequent and somewhat gasping; pulse between 120 and 130; no abnormal murmur in the cardiac region, or in the course of the great vessels; heart's action tumultuous, impulse strong and widely diffused." 2.

Examination after Death.—About half an ounce of pale serosity in pericardium. *Heart.* "Position in the chest natural; surface blueish, from distension of the large and small veins with blood; apex slightly twisted to the left, from the accumulation of coagula in the venæ cavæ and right auricle, is formed by the extremity of the right instead of the left ventricle. The right half of the organ lies anterior to the left. The aorta rises from the right ventricle, and at its origin slightly overlaps the pulmonary artery, which springs from the left ventricle: no communication (except by the ductus arteriosus) exists between these vessels. The aorta contains a good deal of black grumous blood, intermixed with a few fibrinous granules; its lining membrane unstained and healthy. From the upper border of the arch rise two subclavian and two carotid arteries; the two coronary arteries are given off in the usual way immediately above the sigmoid valves; the latter, as well as those of the pulmonary artery, are of the

usual number, smooth, transparent and healthy. The ductus arteriosus pervious and wide enough to admit with ease a good-sized probe, rises from the posterior border of the pulmonary artery about an inch and a half above the origin of that vessel. The opening into the aorta is of oval shape, and exactly opposite the origin of the left subclavian; an elevation of the lining membrane of the vessel is manifest along its lower border. The walls of the ductus arteriosus are slightly thickened, tough and indurated (commencing conversion into ligamentous tissue.) The right auricle, containing an enormous quantity of black grumous blood, which pours from both venæ cavæ when divided, receives those vessels in the usual manner at its posterior surface. Close to the appendix is a small coagulum of shredy fibrine, firmly adherent by prolongations between the interstices of the musculi pectinati; the adhesion in one place so intimate, that the coagulum will not separate without being torn. Left auricle: Walls almost membranous, scarcely any muscular fibres to be seen in them; from general appearance its size may be estimated at about one third of that of the right; it receives the four pulmonary veins in the usual way; these vessels contain blood of the kind already described. Auricular septum: Foramen ovale perfectly open, of oval form, presents its greatest diameter from above downwards: measures about three-eighths by two-eighths of an inch (Engl.,)—when stretched slightly, four by three-eighths. Its anterior border is valvular, semilunar, thick, firm, and has an opaque whitish appearance under the endocardium; the posterior is thinner and sharper. There is another, but minute, opening in the septum, capable of admitting a small probe. Right ventricle furnished with columnæ carnæ of large dimensions, especially with one of unusual size; endocardium healthy, auriculo-ventricular orifice free, provided with a mitral valve, which is smooth, transparent and thin. Left ventricle: Scarcely any columnæ on its surface, all of them very ill developed; endocardium healthy: auriculo-ventricular orifice free, and provided with a healthy tricuspid valve, one division of which, however, is extremely small. Ventricular septum is not perforated."

Lungs.—Venous engorgement where pulmonary veins issue from them —several emphysematous vesicles here and there.

Liver congested with fluid blood. Umbilical vein impervious—ductus venosus presenting a speck of blood in centre.

Spleen gorged with blood. *Kidneys* congested also.

Vena Cava Inferior enormously distended, especially close to the liver, from accumulation of grumous, semi-coagulated blood.

Cranium not opened.

Dr. Walshe deduces from the preceding case, and a comparison of it with others that have been recorded, the following series of inferences:—

1. "The transposition of the primary arterial trunks was attended with similar transposition of the ventricles. The right ventricle presented the muscularity characteristic of the left; the left the thinness of wall natural to the right. That this was not a mere result of the comparative functional activity would appear from the interchange of valves,—the right having the mitral of the left, and the left the tricuspid of the right side. The position even of the ventricles, both as regards their relation to each other and to the chest generally, was changed; the plane of the *right being anterior to that of* the left, and its point forming the

apex of the heart. The aorta, too, slightly overlapped the pulmonary artery at its origin.

2. "The aortic system constantly circulated black blood, with the exception of the extremely small quantity of red carried from the pulmonary artery by the ductus arteriosus.

3. "The pulmonary artery constantly circulated florid blood, with the exception of the small quantity of black which may have found its way through the foramen ovale from the right into the left auricle.

4. "The heart was hypertrophous.

5. "The viscera generally, so far from being smaller, were actually rather larger than in naturally conformed individuals of the same age, though more flaccid (with the exception of the liver) than usual; the muscular and adipose systems were defectively nourished, but not in any very extraordinary degree.

6. "Hence it follows, that the muscular system and viscera may be nourished, without important derivation from the normal state, by blood, of which a minute part only is oxygenised. In other words, an individual may continue to live and be nourished in a state of partial asphyxia, when this has existed from birth.

7. "But as the blood in the portion of the aorta lying between the opening of the ductus arteriosus and the heart was wholly venous, and as the coronary arteries rose from the aorta in the usual position, close to the sigmoid valves, it follows that the nutrition of the heart must have been wholly effected by non-oxygenated blood. Tiedemann has suggested, that in the case observed by him, the bronchial arteries might have been the instruments of partial arterialization. They were in that instance 'unusually large.' and he supposes that the corresponding veins brought back their contents oxygenised to the vena cava and right side of the heart, whence those contents passed by the aorta and coronary arteries to its substance. Admitting this to be correct, (though I am not satisfied that the notion of arterialization occurring in the bronchial arteries is easily admissible,) the quantity of red blood finding its way to the tissues of the heart must have been so small, that the admission scarcely alters the state of the case.

8. "In the present case, and in the only three others in the descriptions of which distinct reference is made to the point, the pulmonary and cavæ veins opened respectively into the left and right auricles, as in the natural state: it may be inferred from the existence of cyanosis that they did so in other recorded cases also.

9. "This malformation has a tendency to associate itself with others;—patency of the foramen ovale, and a pervious state of the ductus arteriosus. The mode of origin of the brachio-cephalic trunks from the arch of the aorta in two of the four cases where the point is mentioned, was also irregular: there were two only in Baillie's case, four in that now described.

10. "This pervious state of the ductus arteriosus, which, under other circumstances, would have caused admixture of black blood with the general red current, has, when the present malformation exists, precisely the contrary effect: upon it the whole system depends for its supply of arterialized blood.

11. "The difference existing in this case in the width of the two auriculo-ventricular orifices was of the same kind as in the natural condition; that is, the width of the right orifice exceeded that of the left, and the width of the pulmonary artery at its origin exceeded that of the aorta, as in naturally formed hearts. Hence, in respect of relative width, the auriculo-ventricular orifices had undergone no transposition, whereas the contrary was the case with the arterial orifices: in other words, while the two orifices of smaller and larger size are respectively, in the natural state, on the same side of the heart, a small and a large one existed on each side in the case described.

12. "The effect of this on the circulation must have been that a less quantity of black blood was sent into the aorta at each systole than that proportional, in the ordinary state, to the quantity received into the right ventricle: and a greater

quantity of arterialized blood was driven at each systole into the pulmonary artery than that proportional, in the natural state of things, to the quantity received into its corresponding ventricle.

13. "The pulmonary lesions, vesicular and interlobular emphysema, must have materially affected the suffocative paroxysms; and these were, in turn, most probably the original cause of the emphysema, more especially of the interlobular variety.

14. "In addition to the usual attendants upon cyanosis, deficient calorification, dyspnœa and suffocative paroxysms, the three infants who lived for any time (those observed by Langstaff, Farre, and myself,) suffered under diarrhœa more or less habitual.

15. "In seven cases in which a fœtus thus conformed was born alive, the duration of life was as follows:

"About two months. (Baillie.)
"Ten weeks. (Langstaff.)
"Five months; the infant died of variola, caught from a sister. (Farre.)
"Twelve days. (Tiedemann.)
"Four or five days. (Dugès.)
"Ten weeks. (Martin.)
"Ten months. (Present case.)

16. "The liver was very considerably enlarged: may it, from its augmented size, have been enabled to effect a greater than the physiological amount of decarbonization of the venous blood, and thus have contributed in some measure to diminish the necessity for arterialization in the lungs?

17. "The decrease in the intensity of the blue discolouration of certain parts after death, shows of itself that this discolouration depended upon the circulation of black blood in the arteries.

"I may observe, too, that the aorta contained black semi-coagulated blood,—that the examination of the body did not take place until thirty-five hours after death,—and the weather at the time was warm and damp: yet there was no discolouration of the lining membrane of this vessel. The case consequently supports the doctrine established by M. Louis in respect of aortic staining,—namely, that this anatomical state requires for its production some as yet unascertained change of the arterial tissues or blood, in addition to the physical conditions associated in the present instance." 14.

The preceding inferences are interesting and just. They admit of no abbreviation, and it were a loss to our readers to omit them.

II. CASE OF ANEURYSM OF THE ASCENDING AORTA BURSTING INTO THE RIGHT VENTRICLE: WITH A COMMUNICATION BETWEEN THE TWO VENTRICLES. By *Thomas S. Beck*, Lecturer on Surgery at Sydenham College.

The patient, a surgeon, aged 31, had the usual symptoms of aggravated cardiac disease, conjoined with the following auscultic signs:—"Dulness on percussion over the whole of the chest. Vesicular murmur distinct, yet diminished in intensity and mixed with bronchial *râles*. The sound of the heart's action heard over the whole anterior and posterior parietes. The impulse increased. Both sounds of the heart were distinctly audible, and following the second sound, a continuous, very superficial, sawing sound with tremor, most distinct at the base of the heart, near to the sternum. This sound was very disagreeable to the ear, being so distinct *and apparently close to it*. It was continuous throughout the

whole of the action of the heart, but loudest directly after the second sound."

Anasarca, ascites, and hydrothorax, closed the scene.

Examination.—Passing over the condition of the lungs, of which it is merely necessary to say, that there were congestive and pleural effusion, we arrive at the *Pericardium*, in which were three or four ounces of red-coloured serum.

The *Heart* was much enlarged: taking the fist of the subject as an approximate measure, it was more than 2½ times that size. After removing it, laying open the right ventricle and part of the ascending aorta, and washing with a stream of water, the lining membrane presented a thickened pearly white appearance, particularly marked near the orifice of the aorta, the right and left semilunar valves were thickened, whilst the posterior had undergone little change. On the valves, and at the commencement of the aorta, were several opaque spots. In the centre of the right valve existed an osseous deposit, beginning at the corpus aurantii, and extending to the walls of the ventricle, so as to keep it constantly distended, and although the action of the other valves was impaired, yet they were sufficiently free as to prevent regurgitation, except to a slight extent. The right sinus of Valsalva was enlarged and presented a round open communication between the aorta and right ventricle, sufficiently large to introduce the end of the little finger. On laying open the right ventricle, the lining membrane presented the same white appearance, though in a less marked degree, the valves were little changed from their natural state, whilst immediately beneath them lay the collapsed sac of an aneurysm, resembling the end of a finger of a glove, about three-quarters of an inch in length, and bursting in the extremity in a large ragged opening with two small openings at the side, the edges of all of which were worn and rounded as if the blood had passed for some time by these openings. The mitral valves were healthy, excepting a white tinge in their colour. No coagulum was found in the sac. The right side of the heart was filled, but not distended with coagulated blood. Immediately at the base of the sac there existed a communication, the size of a goose-quill, between the two ventricles. There was no communication between the auricles." 20.

Mr. Beck thinks there can be little doubt that the opening between the aorta and right ventricle was the remains of an aneurysmal sac; and this certainly does seem to be most consistent both the morbid appearances and history.

III. On the Structure and Functions of the Human Placenta. By *John Dalrymple*, Esq.

Mr. Dalrymple has found, since the prosecution of his researches on this subject, that his conclusions agree remarkably with those of Weber, drawings to illustrate which are given in Wagner's Physiology.

Mr. Dalrymple sets out with asserting, that any direct communication between the uterine vessels, and those of the placenta is impossible. He proceeds:—

1. "The umbilical arteries, after dividing and passing in a convoluted and serpentine form over the fœtal surface of the placenta, dip at various intervals into its substance, there dividing and sub-dividing infinitely. The trunks are covered on the surface of the organ by the fœtal membranes, and each branch,

as it dips into the thickness of the tissue, carries before it a fold of the chorion.

2. "The whole mass of the placenta is made up of the innumerable ramifications of the arteries, terminating in beautiful coiled and convoluted capillaries, which form tufts or bouquets at various intervals; these finally become continuous with the minute origins of the umbilical vein, which returns to the fœtus in the same direction that the arteries left it, viz., coiled and twisted in the umbilical cord.

3. "The vein and its branches are greatly larger than the arteries and their subdivisions, but less numerous.

4. "The direction of the branches of the umbilical arteries is from the fœtal to the uterine surface of the placenta, passing obliquely from the centre to the circumference and edges. The veins return in the reverse direction. All the vessels, besides their own proper coats, are enclosed in a fold of chorion.

5. "As the minute branches of the arteries terminate in serpentine and very intricately coiled capillaries, so are these latter subdivided into masses, or tufted and bouquet-like processes, clothed by prolongations of the before-mentioned membrane.

6. "This membrane (chorion) constitutes (by division into processes) true villi, and each villus contains a tortuous capillary, which entering from the arterial side leaves it by the venous: as the vessel leaves the villus there is a slight but manifest increase of size.

7. "A single tuft or collection of villi, well injected, and laid flat under an inch, or half-inch object glass, appears at first sight an inextricable confusion of curiously-contorted capillary vessels; but separated by needles, and a single villus detached, or expanded beneath a higher magnifying power, this seeming confusion is reduced to order, and the true anatomy of these vessels explained.

8. "The membrane enclosing the vessels and capillaries is studded on the exterior by nucleated cells, resembling an irregular epithelium.

9. "The enclosed tufts, or capillaries, nowhere anastomose with other than fœtal or umbilical vessels.

10. "The arteries and veins, though covered by a common membrane, are nowhere so closely bound together, as to constitute one undivided though really double vessel, as described by Dr. Reid, and the 'blunt extremities,' adverted to by that gentleman, appear to me to be the villi of the placenta.

11. "The villi are not connected together by cellular tissue, but the mass of the placenta is made up by the vascular divisions and subdivisions, and by the tufts or bouquets of capillaries; the interstices are everywhere free, and communicate with each other.

12. "There are no distinct or defined cells constituting a maternal portion of the placenta.

13. "The uterine surface of the organ is covered by the decidua, which does not appear to enter further than between the lobules, and the depth to which it thus penetrates varies with the extent of the fissures.

14. "Stretching from the fœtal to the uterine surface of the placenta are irregular semi-fibrous bands, more firm towards the fœtal surface, and nearly disappearing towards the decidual: these appear to give firmness to the spongy mass, and to a certain extent support to the tufts of villi.

15. "The bouquets of capillaries are found in all parts of the placenta, but are more numerous at the uterine surface, where they will be found close beneath the decidua.

16. Upon the decidual surface may be observed, thinly scattered, certain papillæ, somewhat obtuse and blunted, about a line and a half in length, which seem to be constituted by innumerable coiled and minute capillaries. Are these the analogues of the fœtal cotyledons?" 25.

Mr. Dalrymple makes some observations explanatory of the differences, unfortunately too numerous and wide between microscopical observers. Perhaps they rather account for those differences than are likely to end them.

He explains too the placental circulation thus:—The maternal blood *may* be extravasated by the "curling arteries" into the spongy mass of the placenta—then the fœtal tufts become, in function, absorbent villi, taking up the nutrient part of the fluid, which is carried to the fœtus by the umbilical vein. This blood again is in part returned to the placenta by the umbilical arteries: part however is retained, and appropriated to the nourishment and growth of the embryo.

"In the placenta must go on a double action, or interchange of fluids; for the blood returned to this organ by the arteries is unfitted for a second circulation through the embryo: at least this is true in part if not entirely. Hence, while the blood, or nutrient material of the blood, brought by the uterine arteries, and previously aërated by the mother, enters by endosmose the absorbent capillaries of the fœtal villi, that portion of the fœtal blood that requires the action of oxygen escapes by exosmose, and returns by the uterine sinuses and veins to the maternal heart. Thus the lungs of the mother are in fact the lungs of the fœtus, and hence the comparatively simple system of the vessels of the cord." 27.

Mr. Dalrymple's industry and accuracy are well known. We trust that the researches of others will confirm his.

IV. On the Relation between the Symmetry and the Diseases of the Body. By *James Paget*, M.R.C.S.

Mr. Paget thinks it highly probable that it is a law of the animal economy, that, when uninfluenced by disturbing causes, all general or constitutional diseases affect equally and similarly the corresponding parts of the two sides of the body.

Thus he found in the body of a woman exactly the same kind of disease in each elbow-joint. In another woman, aged 70, he found exactly similar changes in each knee-joint. In another person both hip-joints were so affected. The same thing occurred in another instance. He mentions two more knee-cases, and one humeral one. Then he has got a pair of hind legs of a dog, and two ovaries of a woman to exhibit.

Mr. Paget quotes, to support him, the researches of M. Bizot. "He found that in 2,171 cases of yellow spots in the arteries, a symmetry of the morbid changes was wanting only 62 times; that, in 659 cases of lesions consecutive to such spots, it was wanting only 51 times; and that many of even these few exceptions were connected with an absence of symmetry in the affected arteries, or some similar modifying circumstance."

And after some ingenious, though perhaps not very satisfactory reasoning, Mr. Paget concludes that there may be at least three different conditions in which diseased changes are symmetrical.

"In a first class of cases, they are the result of the gradual degeneration of *the tissues in the course* of time, or after their functions have ceased, or when,

through some general disorder in the economy, the whole body fails of being duly nourished. Such are emaciation, the changes of old age, &c.

"In a second class, the symmetrical changes are the result of a morbid condition of the blood, in which some new material bears a peculiar chemical or organic relation to the whole or a part of some symmetrically-arranged tissue or organ, so that when they come in contact, the mode of nutrition in the tissue is altered, or the new material is deposited in it. These changes are symmetrical, because the same morbid material acts similarly with all similar substances. They are symmetrical and general, when the whole of the seemingly similar tissue has really the very same structure and other properties. But, more commonly, they are symmetrical and local, because the corresponding parts on the opposite sides of the body are the only parts in which the symmetry is, in respect of every property of the tissue, perfect. To this class belong the rheumatic, gouty, scrofulous, tuberculous, cancerous, medullary, and some other symmetrical diseases.

"In a third class the symmetrical changes are the consequences of diseases passing by metastasis from one part to the exactly corresponding part on the opposite side. In some of these a morbid condition of the blood exists, in others it probably does not. In all, I believe that the influence which determines the situation occupied by the diseased process after metastasis is one conveyed from the part first affected through its nerves (which are in state of morbid organic excitement) to the nervous centres, and thence reflected and conveyed through *its* nerves to the part secondarily diseased. To this class must be referred the metastatic affections of the eyes, tonsils, testes, and probably some cases of rheumatism and gout." 41.

We agree with Mr. Paget, that if symmetry in disease *be* a law, there is probably none in science, to which the exceptions are so numerous. In fact the exceptions may be fairly styled the law, and the law the exception.

V. AN ACCOUNT OF A CASE OF EXTENSIVE DISEASE OF THE PANCREAS, By *James Arthur Wilson*, M. D. Physician to St. George's Hospital.

Dr. Wilson has contributed a very interesting case. It is that of a gentleman's servant, aged 41, a hard liver, admitted into St. George's, Oct. 21, 1835. He looked unhealthy and distressed. "He had long suffered from a constant pain in the epigastrium, [described as a 'drawing and pulling together of the pit of the stomach,'] which was occasionally aggravated by paroxysms into severe agony. It was felt most in the recumbent posture, after taking food, and when the bowels were constipated. When most severe, it was accompanied by headache, giddiness and sickness. He had vomited blood sixteen months before his admission, and frequently during his illness. The bowels were obstinately costive, the urine was free. He occasionally complained of a 'fluttering' in the region of the heart, but there was no irregularity in the pulse, which was low and slow, averaging about sixty-five beats in the minute. He was much distressed by 'cold feet,' and complained greatly of want of sleep." About a month after admission, the pain suddenly returned in the epigastrium with augmented intensity. It was ushered in with shivering and violent headache and sickness. *Maniacal delirium* followed, coma succeeded and

in that the patient died. During his illness, no relief was obtained from any but active aperient medicines.

Examination of the body. — There were universal adhesions of the pericardium, but no disease of the heart. The brain was softer than usual, with considerable vascularity of its medullary structure; some clear serous fluid was observed on the outer surface of the arachnoid membrane, but very little had been effused into the ventricles. The liver was pale, soft, and friable. The spleen was very pulpy.

"The pancreas was of unusually hard texture, and much contracted in its general dimensions. Its ducts were universally filled with a compact, white, earthy deposit, which, on analysis, was found to consist of nearly pure carbonate of lime, with a fibrinous nucleus of animal matter." 45.

VI. CASES OF LARYNGITIS RELIEVED BY OPERATION. By *John Wilson*, M. D. Physician to the Middlesex Hospital.

Dr. Wilson makes some very just reflections, which are not, perhaps, so widely acted on as they might be.

"Generally," he observes, "as the difficulty of respiration increases in laryngitis, so does the danger. The primary obstruction arises from the contraction of the rima glottidis, the secondary from a less quantity of air being thus permitted to pass into the chest. The lungs become only partly expanded, on inspiration, and this deficiency is sought to be supplied by the number of respirations being increased. Thus, as the circulation of air becomes embarrassed, the circulation of fluids becomes so likewise. Hence blood or serum infiltrates into the tissue of the lungs where the respiration is most defective; as this infiltration increases, the lungs become less permeable to air, while the other parts, yet enabled to maintain their integrity, having now to discharge the whole respiratory functions of the lungs, become over-exerted, and ultimately portions of these, most commonly the margins, become distended with air, and unable to contract. Thus do the emphysematous, like the œdematous portions, become deprived of their contractile power; the permeable parts becoming further diminished, and the lungs less able to perform their office: while at the same time the bronchial irritation is increasing the danger.

"Lastly, the blood, from its imperfect circulation through the lungs, becomes vitiated by defective oxygenation; then its action on the brain produces coma, while its dark veinous colour becomes apparent in the livid countenance.

"These are the immediate precursors of death. Yet this is the stage which the patient is not unfrequently allowed to reach, before it is judged adviseable to make an artificial opening for a freer passage of air; and when then made, death soon follows the operation, and sooner still when blood from the wound descends by the trachea into the lungs.

"Yet in cases where the breathing becomes equally alarming, but where the permeable portions of the lungs may be still sufficient for sustaining life, till time be given (by an operation) for the reparation of the lesions of the other portions, and likewise of the larynx, which then acquires a comparative state of repose,—under such circumstances an operation may never be too late, and recovery may take place, even though respiration may have ceased, if life be not extinct.

"Likewise, although the lungs may have sustained lesions, which must ultimately become fatal, life may yet be prolonged though not saved by an operation. Therefore, in cases where such severe lesions may be anticipated, the proper time *for operating should* be before they become irremediable.

"It should always be borne in mind, that as the time is prolonged for the effects of other remedial agents, the chance of success for this one is proportionably diminished.

Such also were the reasons that first induced me, in the early stage of acute pleuritic effusion, to have a trochar passed into the affected side of the chest, and to draw off at once nine pints of clear fluid,—thus averting threatened death, and at the same time allowing the lung to expand before it had become permanently compressed. The operation was not repeated, neither was any more medicine given. The patient recovered the use of nearly the whole of that lung, and was in good health some years after, and then I lost sight of him. The details were given in a paper read at the College of Physicians in 1837.

"It was the result of this operation which first led me to think that an early one might be beneficially performed in laryngitis." '62.

Dr. Wilson relates three cases.

Case 1.—E. S. aged 46. Ill ten months, with cold, hoarseness, &c. Now complains of great difficulty of breathing. On attempting to go to sleep, a loud hiccough comes on, with great difficulty of breathing, and a sense of suffocation as if choked with wind. She points to the larynx as the seat of her sufferings. On the 10th, she had occasional paroxysms of stridulous breathing, and made such a noise that it was necessary to remove her from the ward. Soon after the stridulous noise returned with more intensity, and continued so till three o'clock this morning, when she became somewhat delirious, then comatose, and at seven was covered with a cold clammy perspiration; at eight her countenance was cadaverous, breathing about twice a minute, with acute stridulous sound; the larynx was immoveable during the attempts at inspiration. On applying the stethoscope to the larynx and chest no air could be heard to pass. The pupils were contracted almost to points, and insensible to a lighted candle; she looked like a person after taking a large dose of opium, but she only had had ℥xv. of the tincture in the early part of the night.

"The resident medical officers made a small opening through the integuments, just sufficient to admit a large trochar to pierce the crico-thyroid membrane and pass into the larynx; the stilette was then withdrawn, and the canula properly fixed, when air was instantly heard to rush into the trachea and lung; though prior to this she had evidently ceased to breathe. The respiration gradually resumed its force and frequency. The pulse, which before had been intermittent, became steady, and increased in frequency. The countenance lost its livid appearance, and the whole surface became covered with a warm perspiration."

Consciousness returned. It was necessary to substitute a curved tube for the straight one, but on the 22nd or 23rd, all tubes were dispensed with. For some time she breathed through the opening, which then closed, but would often be forced open by a paroxysm of coughing. On the 17th November, the wound closed finally. On the 21st January, she was discharged, and now, three years after the operation, she is well, with the tone and power of voice natural.

The *second case* was that of a man aged 27, who had been ill six days with cough, hoarseness, *&c. On admission*, at one P.M., the face was

livid and pale, with raucous breathing, and threatened suffocation, paroxysmal cough, vesicular respiration inaudible in any part of the chest, but raucous sounds distinct.

The symptoms grew worse, and in the afternoon laryngotomy was performed with immediate relief. The canula of a curved trochar, which was employed, was taken out for some hours on the next day, 16th of November, and it was finally removed on the 18th December. On the 27th January he was discharged. At the end of two years, his voice continues raucous.

Dr. Wilson remarks, in reference to these cases;—"The one may be properly classed as chronic, while the other may be as justly regarded as acute laryngitis. One of nine months' the other of six days' duration. In both the crico-thyroid membrane was pierced by a trochar. In the first, a straight or common one was used: in the other, I modified the straight into a curved trochar: for, in the first case, though the straight one answered equally well for performing the operation, yet the straight canula caused irritation at the back part of the larynx, and the open end of the tube itself was thus liable to be obstructed; from these defects, the curved one was free.

"So that, generally, in such cases, when an operation may be required, I should give a preference to this over the other ways of performing it, because the part is well marked by the thyroid and cricoid cartilages, and it is free from any large vessels. The wound thus made is the smallest possible, being only just sufficient for the tube itself; a point of some importance, as it lessens the risk of hæmorrhage from the wound escaping into the lungs, and accelerating death. Such a case I lately saw, where death took place in half an hour after tracheotomy had been performed on a child. Lastly, having made the perforation with a curved trochar, which is soon done in thin adults, when the part is not ossified, there is no further difficulty or delay in introducing a tube, for that is already done when the stilette is inserted.

"These observations are more applicable to adults than to children; for with the latter the difficulties become greater as they are younger. In these the trachea and larynx are less prominent, and too pliant to be held firm; the parts covering them are soft, and bleed freely, while at the same time, the struggles of the infant add to these difficulties."

Dr. Wilson relates two other cases in which the operation gave relief, but was not successful. The second case was one of croup. The child survived the operation ten hours. On examination of the body, it was found that a white false membrane lined the larynx, trachea, and bronchi to their second divisions. Beyond that the mucous membrane was red and vascular, and there was infiltrations of blood in the lungs, particularly in their lower lobes. Dr. Wilson concludes with the observation:—"Thus croup, to which children are liable, differs from laryngitis, which attacks adults: the first involving all the air-tubes, (the trachea and bronchi,)—the latter, at first at least, only the larynx, so that an opening can be made below the seat of disease in laryngitis, which cannot be done in croup.

"In concluding it, it may be as well to notice, that when the canula is taken out to be cleaned, it will often be found lined with not merely an

inspissated but even indurated crust, so considerable as to have diminished the calibre of the tube, and impeded respiration. The tube, when in warm water, may be freed from this by the feathery end of a quill. To clear it of mucous, when in the larynx, a more slender feather may be used. It will frequently be easier to return the curved canula, by first oiling it, and then introducing it with the end pointed upwards and when within the opening to turn it down. A blunt probe made, like the stilette, to pass just beyond the open end of the canula, may also at times be of service in returning the tube."

VII. Peculiar Symptoms affecting an entire Family, and terminating in Death. By *John Wilson*, M. D. Physician to the Middlesex Hospital.

The cases related in this paper are certainly most remarkable, and, in their nature most obscure.

It appears that on New Year's day, Arzoni, a Neapolitan, and manufacturer of ultramarine, was taken with griping pains and purging, which never ceased till death. He was sick at times, but never vomited. The motions were offensive and black. He had frequent cold fits through the day, followed by much fever. His joints, from the beginning, were swollen, not red, but so painful that he could not move on being put into a warm bath. His age was 47, and he died on the 20th January.

On the 2nd, an infant child of Arzoni's, and the mother, an Englishwoman, were seized with violent pains at the crown of the head, and a desire, with inability, to go to sleep. The infant died. The case of the mother, as a sort of type of the rest, may be detailed.

"During the night she lost her consciousness. Her bowels, from the first, were affected with severe pain, and she felt a frequent desire to evacuate them, when, at times, nothing but fœtid gas, like that of rotten eggs, came away; at other times, the matter passed was like putrid and very offensive flesh. Three days after being first seized, she lost the use of her limbs, and had pain in all the joints. On the sixth day, œdema of the feet, legs, and thighs came on. The urine was scanty, very high coloured and offensive. The water, which from the first flowed from the mouth, had a 'cankery' taste, the glands of the neck and lower jaw were tender, and the eyes watered. The discharge of water from the mouth and eyes still continue; tongue very red, clean and transversely fissured. Gums vascular, quite clean, not swollen, but rather contracted. Abdomen large and also tympanitic. Thinks she may be four months gone in the family-way. Complains of general soreness, debility, and lowness of spirit.

"Next day after admission, the urine was brown, very alkaline, and had a white ropy sediment. She still has the peculiar taste in the mouth, but most marked under the tongue, of which taste every thing she takes seems to partake. Exquisite sensibility and soreness over all the body. Says the motions are of a better colour than they have been at any time previously. She and also both of the children now wished for some acid drink, which was given them. but her urine continued for some time afterwards very alkaline. She never rallied, but continued greatly depressed both in mind and body.

"A few days afterwards, the legs and thighs became erythematous and shining, the œdema increased and pitted. Purging frequent, and, at times, motions passed

involuntarily after taking fluids. No appetite, and every thing turns sour on the stomach.

"February 8th.—For two days, itching of the whole body has taken place of the exquisite sensibility and soreness. There is a waved erythema over the back and abdomen, the skin being variegated by alternate red and white streaks. The erythema of the legs continues, though she has somewhat more use of the limbs. —Complains of thirst, and again wishes for acid drink; urine afterwards became neutral, but she became more feverish and restless. Mouth and eyes continued to water. A troublesome, dry, hacking cough came on, and continued, which prevented sleep, and caused severe pain in the head. Purging recurred, and she was obliged to keep a bed-pan under her; when the purging ceased for a time, the motions were of a dark drab colour, as they have generally been.

"The cuticle of both legs broke, and, after the discharge from them had continued for some time, the swellings had much diminished and altogether subsided afterwards; the urine increasing at the same time. Intellect has always been perfect. Often has only been able to take arrow-root and jelly.

"February 25.—Mother's pulse 72, fœtal pulse 130.

"March 15th.—Gave birth to a very small infant, which only lived twenty-four hours; its length was 14½ inches, weight 2½ pounds. From this period Dr. Ashburner continued to see her. The pain over the abdomen remained the same as before delivery, and different from any she had felt after a confinement. Puerperal fever supervened, and on the 21st March she died.

"*Inspection, forty-eight hours after death.*—A considerable quantity of turbid fluid in both sides of the chest. Adhesions of the right lung and upper part of the left, which last had tubercular depositions at the apex. Much clear fluid in the pericardium. Abdomen contained a large quantity of turbid fluid mixed with pus and shreds of lymph. Stomach and intestines very much distended with air, but no morbid traces found in them. Liver pale; and throughout the entire body there was a great deficiency of colour. Some coagula in the large vessels. Uterus had not contracted to the size it usually does in the time elapsed since delivery. Spermatic veins of the right side of the uterus thickened, and filled with a fibrinous clot, extending up to the vena cava." 78.

John Arzoni, aged 11, was seized on the 14th January. He was admitted on the 26th, and died on the 11th February. The symptoms and progress of the case were very similar to those already described in the mother's. One circumstance deserves mention. For several nights, though the temperature was 10 or 15 degrees below the freezing point. he lay with only a sheet, and hardly that, over him.

Inspection.—"Œdema of the legs; all the muscles remarkably stiff and pale: Tissue of both lungs infiltrated with black blood, particularly the posterior parts, and so heavy as to sink in water. The margins of both lungs were emphysematous. The cavities of the heart contained very black, soft coagula, but without any fibrine. Stomach empty, much corrugated, and general surface pale, but the depressed parts of the folds were of a pink colour, and about the large arch in one of the depressions was a small excavation, narrow, red, and one-third of an inch in length, filled up with a black coagulum; when washed, the excavation had an appearance somewhat like an ulcer in the process of healing. Near the same part, and within the space of four square inches, were three or four much smaller spots, similar to the above, but without coagula. Not far from the same part was a longitudinal depression, less deep than the first, and much paler, about ⅛ths of an inch in length." 80.

Intestines generally pale. Brain presenting no morbid appearance.

Mary Ann Arzoni, aged 5, was attacked at the same time, with the same

symptoms, as her brother. She was admitted on the 26th of January, and died on the 19th of June. The symptoms, though more chronic, were of the same character as in the other instances. She would ask to be turned in bed 200 or 300 times in a night. During the last few days of her life, she lay without any bedclothes over her.

The following summary of these cases will be read with interest:—

"The death of the mother was accelerated by parturition, and examination after death showed very extensive disease in both the abdomen and chest, yet probably differing considerably from what might have resulted had parturition not occurred, and had she died, like the children, of the affection common to all of them, and not been sooner carried off by a new disease supervening on the original one.

"The abrasions or ulcerations in the sulci of the stomachs of the children have been noticed; but they were so slight, that in ordinary cases they might have been overlooked, without attention being particularly directed to the inspection of that organ. Neither the mucous membrane of the intestines, nor other parts of the abdominal viscera, showed any particular change from the normal state.

"But the organ by which death finally entered, appeared in these two to have been by the lungs; for the blood at last seemed to have infiltrated into their tissue, rendering portions of them dark, and so heavy, yet not hepatized, as to sink in water, and resembling considerably the state of the lungs of those who died of the spotted fever in 1837, and which I have described in the Medical Gazette as non-circumscribed pulmonary apoplexy, caused by the blood becoming so altered as to escape from its proper vessels into the tissue of the lungs, thus rendering portions of them (as in these) black, and so heavy as to sink in water. Yet these parts were not circumscribed by healthy lung, but they gradually shaded off from the heavy dark parts to the permeable portions.

"In general the treatmennt of this family was merely palliative. Among the few trials had recourse to in medicine, I used the saline treatment for spotted fever, but without any apparent advantage. The same may be said of the other trials, excepting the preparation of iron, which certainly seemed to restrain the purging entirely for a length of time, and to have been otherwise beneficial in improving both the colour and strength of Mary Ann, so that she was even able to turn herself a little. To the others iron was not given.

"In all the three patients the most prominent features of their sufferings were the general soreness of the fleshy parts as well as of the joints, exquisite sensibility of the skin when touched, and the pain produced whenever they were moved, or their positions changed, according to their so frequently-expressed wishes.

"Next may be noticed, the œdema, and particularly that of the inferior extremities, which was present in all the three. The alkaline state of the urine when admitted and their desire for acid drink. The faces of all being pale, haggard and so care-worn, as to give to the children the aspect of aged dwarfs, from their hollow cheeks, sharp features, exsanguined and emaciated bodies. At the same time their appetites were great, and that of Mary Ann ravenous. Yet the mother's never was good, but on the contrary, at times, it was difficult to induce her to take even some trifling sustenance. The mother at different times was much exhausted by diarrhœa, and both the children suffered from it but less severely. The father also is stated to have been affected greatly by a disordered state of the bowels.

"During their afflictions, the intellects of all preserved their integrity, and might even have been regarded as preternaturally bright, had it not been ascertained that every one of the family was reckoned quick and clever. Towards the nurses their tempers were irritable.

"Lastly, there was the 'cankery' taste of the mother. The 'metallic' taste of the boy. The watery state of the mouth and eyes in each. The teasing, hacking, dry cough, common to all, and affecting the children particularly towards the last.

"Then their lying sometimes without any covering, even during the coldest season, and when dying objecting to even a sheet; while their flesh was so greatly wasted, and the lungs becoming less and less capable of absorbing oxygen, from the gradual infiltration of blood into parts of their vesicular tissue, diminishing proportionably the permeable portions.

All attempts made by me to trace the source whence originated these affections, resulting in the loss of life, ended only in varied and conflicting accounts." 86.

A Coroner's inquest was held on the bodies of the father and infant. Nothing was elicited and the nature of the cases remains shrouded in mystery.

VIII. A CASE CONGENITAL CATARACT, WHERE SIGHT WAS ACQUIRED BY OPERATION, AT THE AGE OF TWENTY-THREE YEARS.

There have been two cases on record of congenital cataract cured by operation. The patient in Mr. Cheselden's famous case was 13 years old—in Mr. Ware's, 7.

Every body knows that Cheselden's patient thought every thing touched his eye. He could in a strong light distinguish different colours, such, as black, white, and scarlet, before he was couched; but, after the operation, he did not for some time perceive any difference between them. He knew the form of things by feeling, but not by sight: and it was a long time before he gained an accurate knowledge of the difference of objects when he had acquired sight. Every thing appeared to him larger than it was: of which by comparison and experience alone he was enabled at last to form a correct judgment. He was surprised that those whom he loved most, did not appear most agreeable to his eyes, expecting that they would be the most beautiful. He had the same feeling as related to taste, and was astonished that a small picture could represent a large body, saying, "It should have seemed as impossible to him as to put a bushel of anything into a pint measure." He had also but little idea of size, thinking the whole house could not look larger than his own room.

Mr. Ware's patient could, before the operation, distinguish colours, but nothing else. He acquired sight almost immediately. On the third or fourth day he knew a letter that was shown to him, and could point out several other things both by name and colour.

Mr. Stafford's patient was an interesting little girl, 23 years old. She was admitted into the Marylebone Infirmary, June 1st, 1840, with congenital cataract, apparently capsulo-lenticular, in both eyes. She had, all her life, been only able to distinguish light from darkness. She distinguished objects, and groped her way about by touch. Mr. Stafford operated by depression. The operation succeeded perfectly. The following abrégé of the results by Mr. Stafford contains what is most interesting.

"In the case here related, the acquisition of sight was very gradual. At first *all was confusion.* The third week she began to distinguish objects, and to be

conscious of the difference of one thing from another; and was aware when a piece of rag was waved before her eye that something was moving backwards and forwards. In a month she knew that a piece of rag was white: that her prescription card was white, and that black was opposite to white, being, according to her own expression when she was shown my hat, "quite different." In five weeks she was acquainted with the difference of colours; for she could describe accurately the nurse's dress, which happened to be composed of three colours, white, red and blue. Her knowledge both of form and colour rapidly improved, for in three months she could mention any article in ordinary use, and point out the difference in these respects of each, and knew the numerous colours of the different flowers of a large nosegay,

"Form and colour are simple ideas. Distance, measurement, feature, number and time, on the contrary, require two operations of the mind; first, the simple sight of them; and, secondly, a judgment to know their difference. In distance we see several objects, and judge that one is nearer to us than another. In measurement we see the object at certain distances, and judge of the different distances of one thing from another by the number of yards, feet and inches they are apart. In feature we make a comparison between two or more people. In number we first see each thing, and then count them, and in time we know there is day and night, and that the whole comprises twenty-four hours, consequently we make a measurement by the division of it into hours, minutes and seconds. That the patient should so soon have distinguished colours and form we can understand, because it reqnires only one operation of the mind; but that she should (without being taught) so soon have acquired a correct knowledge of distance, measurement, the distinguishing one person from another, number and time, is very extraordinary. Distance and feature was her next acquirement. In three months from the operation, I told her to go to the different beds of the patients in the ward. The beds I wished her to go to were, the last, the last but one, the third or fourth from her, &c. She did so without hesitation. She could also tell me the name of each individual in the beds, and could distinguish the features of each person, even if twenty people were assembled together. In rather less than six months, I thought I would try whether she had any idea of measurement. As I have stated before, I took her to different parts of a large ward, and asked her the measurement from one part to the other, at several distances. To my astonishment she answered me with great accuracy. I tried the same experiment in other rooms, with the same result. I then asked her how many things she could count: she immediately went to the mantel-piece, and counted twenty, saying, 'If you wish it, sir, I can count up to 100.' I inquired if she knew what time meant. She said 'I know the time of day when the clock strikes, but I cannot tell what time it is when I see the clock.' These questions I repeatedly asked her, and her replies were always nearly the same. I endeavoured to find out by what operation of mind she obtained this knowledge.' She could not tell me. I also tried to discover what her first impressions were on seeing the human face, and other things; her respondencies were so confused and ambiguous, that I am convinced she had formed no idea. In fact, although so correct in the faculties I have mentioned, being totally uneducated, and brought up with the ignorant, she was of weak intellect, and had never reflected beyond the little occurrences by which she was immediately surrounded." 99.

The case is well detailed.

IX. Observations on Tubercle of the Brain in Children, with a Tabular View of Thirty Cases of the Affection. By *P. Hennis Green*, M.B.

Dr. Green observes, with *justice*, that the subject of tubercle of the

brain in children has not attracted sufficient attention. He observes, too, that it would be a desirable thing if all cases of cerebral disease were carefully noted, and the appearances after death accurately ascertained. He has known many instances of "anomalous disease" of the brain, explained by lesions of the medulla oblongata which had escaped notice. He recommends that the spinal marrow should, in all cases of fatal cerebral disease, be carefully examined—a recommendation not likely, we fear, to be acted on.

He presents us with a table, which contains the name, age, sex, symptoms, and lesions, of 30 children who died from or with tubercles of the brain.

"The ages varied between nineteen months and twelve years; 13 cases occurred at the period comprised between the ages of two and four years, inclusive; a greater number than occurred during any other three consecutive years.

"With respect to sex, 14 were boys, 16 girls.

"In 4 cases no symptom whatever of cerebral disease existed during life; in 2, the chronic symptoms were confined to periodical headache; in 2, to deafness and purulent discharge from the ear; in the remaining cases the most prominent symptoms of the chronic stage were headache, vomiting, amaurosis, convulsions, paralysis, and diminution of the intellectual faculties; the duration of this chronic stage varied from one month to three years.

"Nine of the patients died with symptoms closely resembling those of acute hydrocephalus; a few with symptoms of softening of the brain; the rest of consumption, small-pox, &c.

"The volume, number and sight of the tuberculous masses varied considerably in different cases: in one case twenty tubercles were found in the right hemisphere in another, seventeen; frequently, however, they were single."

For the table itself we must refer to the Society's volume. We pass to Dr. Green's account of the history, symptoms, and diagnosis of the disease.

Tubercle of the brain is rare in adults; but in children it is comparatively frequent. Dr. Green has observed it in 26 instances, out of 1324 cases of acute disease, or in 1 case to every 51 of such.

Age.—If we may judge from 75 cases, the age at which this disease most frequently occurs appears to be from three to seven years inclusively.

Number.—They are often single—often numerous. In one case there were 20 in the right hemisphere—in another 50 in the cerebrum and cerebellum.

Volume, varies from the size of a small nut or bean to that of the double fist.

Seat various, most ordinarily in the substance of the hemispheres. In the 30 cases contained in the table, the tubercular deposit existed eleven times in the hemisphere of the cerebrum; nine times in the cerebellum; seven times in the cerebrum and cerebellum together; and twice in the cerebellum and pons Varolii, together. But Dr. G. has notes of two cases in which the tubercle was confined to the pons Varolii.

Attendant Lesions.—"In many cases, even when the tubercle is of consider-

able size, we cannot discover the slightest change in the surrounding nervous substance, or in the neighbouring membranes. The gradual development of the tubercular mass seems to pass unheeded by the central nervous system. In other cases the membranes adhere to the cortical substance, over the site of the tubercle, and are more or less infiltrated and thickened. Sometimes, when the tubercle is large, the convolutions are flattened or completely effaced. The colour and consistence of the nervous substance, immediately surrounding the tubercle present a great variety of modifications. It may be slightly injected and softened to the depth of a few lines only; or the softening of the nervous tissue, with or without injection, may extend to the central parts of the brain. In some cases nearly the whole of the cerebellum is reduced to a mere pulp. In a few rare examples, on the contrary, the surrounding nervous substance is more pale and of a denser structure than is natural; sometimes it is soft and of a straw-yellow colour. I have never seen any appearance of abscess or of true infiltration of pus in the immediate vicinity of a cerebral tubercle." 200.

There are other lesions, more complications than consequences.

Cause.—Dr. Green cannot satisfactorily account for the peculiar tendency of young children to this affection. The first dentition is its principal epoch—in some cases it has followed convalescence from an exanthematous disorder—in several the patients have been cut off by tubercular disease.

Symptoms.—Dr. G. arranges these under two stages, the chronic and the acute.

Chronic Stage.—Its duration varies from six weeks to two years. He has grouped these cases under three classes:—"In the first class the disease commences with headache, and then gives rise to various lesions of sensibility or of muscular power.

In the second class, it begins with convulsions or epilepsy, which gradually terminate in paralysis.

"In the third class the first symptom observed is paralysis of one of the limbs.

1*st Class.* "Here the disease," we quote, for we cannot render more concise, Dr. Green's description, "commences with headache, which is by far the most constant and characteristic symptom of cerebral tubercle; it formed a prominent feature of the disease in seventeen of the twenty cases.

"The headache is often very severe and of an obstinate nature, preventing the patient from sleeping at night, changing the temper, and sometimes eliciting acute cries like those of hydrocephalus. The seat of the pain is generally in the forehead, but in a few cases where the tubercular mass occupied the cerebellum, the pain was seated in the occiput, and extended down towards the neck. This severe pain is, sometimes, the only symptom which exists; in other cases, after having been present for a few days or perhaps for several months it is succeeded by other symptoms, to be presently noticed.

"The attacks of headache are occasionally associated with vomiting, which recurs on each exacerbation of the pain, and cannot be traced to any disorder of the digestive organs. This chronic or sympathetic vomiting was observed in seven cases. The bowels may be constipated at these periods, but costiveness is less frequent than vomiting, and both symptoms are much more allied to acute diseases of the brain.

"The symptoms which follow in the train of headache are extremely varied: they chiefly consist, however, in lesions of the senses, the muscular power, or the intellectual faculties. The child's temper may undergo a notable change, and the intellectual faculties may become dull, but the disturbance or loss of the latter

is rarely observed, except in cases of long-standing, and towards the termination of the disease.

"Convulsions sometimes occur at irregular intervals and terminate in partial or total paralysis of one or more limbs; in other cases we merely find a weakness of certain muscles, not amounting to paralysis; the child stumbles as it walks along, and progression is much impeded: particular muscles also may be affected. Thus in one case the only lesion of the motor power observed for some time was a peculiar convulsive movement of the muscles of the eye-ball, by which it was incessantly jerked inwards. In a few cases strabismus occurs.

"The symptoms connected with derangement of the sensibility are, loss of hearing, feebleness or total loss of sight, and a diminution of the cutaneous sensibility on one side of the body. The various symptoms just noticed are seldom permanent; the headache often disappears after having existed for several months, and returns again; the strabismus and amaurosis may also disappear, but the paralysis generally persists, especially when the limbs are affected by it."

2nd Class. In "these cases the disease commences suddenly with convulsive attacks or an access of true epilepsy: these recur at various intervals, and gradually terminate in paralysis or coma. The convulsions may be general or partial, and are often followed by contraction of one or both extremities on the same side of the body, or the head may be drawn to one side, and remain in that position for a considerable length of time. I have not noticed the deviation of the mouth or tongue, which seems to be characteristic of acute hydrocephalus. The convulsive affections often present some peculiar features. Thus, in one instance, the disease commenced with nervous tremour of the left arm, which lasted for six weeks, and then terminated in epilepsy: in another case, several attacks of convulsions were followed by a peculiar rotatory motion of the head: in a third, they were succeeded by squinting, and a lateral motion of the lower jaw. These convulsive attacks are rarely attended, as the headache is, with vomiting or constipation of the bowels.

"Instead of convulsions, the first symptom observed may be a sudden attack of epilepsy, which always terminates, after a longer or shorter interval, in general or partial paralysis. Convulsive movements existed in twelve of the twenty cases, and epilepsy in five." 205.

3rd Class. The disease commences with paralysis of one or more muscles, or organs of sense. Dr. Green relates a case in point. He observes that a general summary of symptoms so diversified is impossible. But the chief and most important is headache—after that come partial or general convulsions, epilepsy, paralysis or contraction of certain muscles or limbs, change of temper, and amaurosis.

Acute Stage. There was such in thirteen out of thirty cases. In most cases, it consists "in a succession of symptoms of an irregular character, and more or less allied to those of acute hydrocephalus, or softening of the brain. Thus the acute stage of cerebral tubercle may commence as the third stage of acute hydrocephalus, or the symptoms of the different periods of this latter disease may run rapidly into, and be mixed up with each other. The duration of the acute stage varies from eight hours to eighteen days." Sometimes there are general convulsions which terminate in fatal coma, or they may be so violent as to cut off the patient in a few hours. Dr. Green observes:—

"The irregularity of the symptoms which occur in the acute stage of cerebral tubercle, is, I conceive, a very important point in the history of cerebral disease amongst children. Authors frequently mention the occurrence of anomalous cases of hydrocephalus, of cases, in which the first stage of the disease was *wanting*. Is it not probable, from what has been said, that many of these

hitherto unexplained anomalies depend on the complication of acute hydrocephalus, with cerebral tubercle, or, to speak more correctly, on the fact, that the acute stage of cerebral tubercle generally consists in irregular hydrocephalic symptoms?" 207.

Diagnosis. Dr. Green admits its difficulty. This, he observes, "depends not only on the irregularity of the symptoms, but on the length of time, which often separates the appearance of one symptom from another. A lapse of several months may occur before the headache is followed by any other sign of cerebral disease, still our diagnosis must be founded on the succession of certain symptoms. The disease, it may be remarked, almost always occurs in children who manifest signs of a scrofulous diathesis. When, under these circumstances, a child has suffered for some time from severe headache, when the headache is followed by convulsive movements, some paralytic affection, amaurosis, contraction of muscles, occasional vomiting, accesses of fever, and the train of symptoms already mentioned, and when these symptoms succeed each other at various intervals of weeks or months, we have very great reason to believe that the child has tubercle of the brain,"

He has never seen independent chronic softening of the brain in children—he supposes its symptoms would be similar. With chronic meningitis it may be confounded.

"The points of resemblance are the duration of the disease, the change of temper, the occasional headache, and the contraction of muscles, which occur in chronic meningitis. In this latter disease, however, the headache is not so severe or constant: we more frequently observe irregular accesses of fever, and the only permanent lesion of the motor power, which I have seen, was a peculiar flexion of the muscles of the hand and foot.

"The paralysis, amaurosis, epileptic attacks, contraction of various muscles, are peculiar to cerebral tubercle, at least so far as my experience goes." 208.

Of *Treatment* we need say nothing.

Dr. Green's paper is a valuable contribution to pathology.

X. CASE OF LOCAL TUBERCULAR DEPOSIT UPON THE SURFACE OF THE BRAIN. By *Robert Dunn.*

Mr. Dunn, an intelligent and experienced practitioner, has given an interesting account of this case.

The patient was a fine boy, two years of age. He had been healthy from birth, and forward, but for four months previous to his last illness had become extremely irritable.

On the 7th of October Mr. D. was suddenly called to him. He had been attacked with convulsive jerking of the left hand. He seemed well in other respects. On the application of mustard and hot water to the hands and feet, the jerking subsided in about twenty minutes. We need not particularise the treatment that was now or subsequently pursued, as, though judicious, it did not seem to influence, materially, the case. It was ascertained that the child had had a fall about a fortnight before. At nine A.M. next day, the jerking returned and extended to the elbows, but subsided in half an hour. He suffered off and on till three P.M. of the 11th, when he was seized with a *severe attack of* convulsive jerking, which

was not confined to the hand and arm, but involved the whole of the left side and lower extremity in convulsive agitation, with twitchings of the eye and angle of the mouth. The attack lasted two hours. On each of the two next days, he had two fits still more severe. They were followed by profound sleep, and the side was left partially paralysed. At 1 A.M. of the 14th, occurred a violent attack; the convulsive agitation of the whole of the left side, from hand to foot, was excessive. In the forenoon another fit, in which the convulsive motion, contrary to its former course, had begun first in the foot, and from thence had gradually extended up the side to the arm and hand, leaving the leg paralysed and helpless. In the afternoon another fit more severe still.

From this to the 22nd, (a week) there were no fits, but there was occasional jerking of the hand and foot, with heaviness, &c. On the 22nd, he was seized with a kind of cramp or spasm—now in the hand, then in the foot,—at other times in the calf of the leg, muscles of the thigh or side, and from which, during its continuance, he seemed to suffer dreadfully. He was afflicted in this way for three or four days, when these spasms subsided, and left him with decided symptoms of effusion. He continued almost comatose for some time, when he was again seized with screaming fits, and convulsive motions in the right arm and leg. Sometimes these extended to the left side. On the subsidence of one of these attacks, he sank, on the morning of the 15th of November.

Inspection.—"The scalp was pale and bloodless, like the rest of the body, which was much emaciated. The dura mater healthy. The vessels on the superficies of the brain were tinged with dark blood, but there was no subrachnoid effusion. The arachnoid cavity was natural. On the surface of the right hemisphere of the brain, under both the arachnoid and pia mater, there was a deposit of tubercular matter, in patches of irregular shape and size, but the whole occupying a surface of about two inches square. The deposit was most abundant on the surface of the convolutions, it nevertheless descended into the sulci between them,—a circumstance which proved its connection with the deep surface of the pia mater. The cortical substance of the brain in contact with the tubercular matter was reddened and greatly softened, and, on microscopic examination, evinced a nearly total destruction of the tubules in it, a great enlargement of the proper globules of the grey matter and of the pigment granules which adhere to them. The softening extended a slight way into the subjacent white matter. On the edge of the left hemisphere, corresponding to the diseased patch of the right, a slight tubercular deposit had taken place in a similar manner, producing a red softening of the grey matter in contact, but not occupying more than half an inch square in surface. The ventricles contained more water than natural—about double—and did not collapse when laid open. The cerebral substance throughout, excepting at the diseased part, was firmer than usual at the patient's age. This firmness was no doubt owing to the compression of the fluid, which probably at an earlier period of the disease was more abundant." 217.

This case forms an appropriate pendent to Dr. Green's paper.

XI. A CASE OF STRICTURE OF THE TRACHEA. By *W. C. Worthington*, Esq. Senior Surgeon to the Lowestoft Infirmary.

C. N. aged 49, agricultural labourer, had enjoyed pretty good health. *In* 1833 he contracted syphilis, for which he took mercury, "not to an

immoderate extent." He now experienced cough and soreness of throat, with slight difficulty of swallowing, and decline of health. In August, 1837, Mr. Worthington first saw him. He was emaciated, feeble, had uneasiness about the throat, and made in breathing a noise like that of "a roarer." Each inspiration occupied ten seconds, the chest expanding only six times in a minute. Expiration was performed in much less time than inspiration, with much less exertion and with diminished intensity of roaring. There was violent action of the hyoïd and thyroïd muscles. Vocalisation was very imperfect, and the voice raucous. There was troublesome cough, with a copious muco-purulent expectoration, the checking of which tended in some degree, to increase the difficulty of breathing. The patient complained also of an offensive discharge from the nostrils, followed by occasional exfoliation of osseous matter, which appeared to be connected with disease of the inferior turbinated bones. When the larynx was much compressed there was pain. Slight roughness of the epiglottis felt by the finger—no stethoscopic indication of disease of the lungs.

Mr. Worthington thought that little could be done. The patient went on for nearly four years. The peculiar roaring sound and raucous voice never left him. He was generally worse when the atmosphere was damp and cold, and when exposed to the night air. In the winter months he was mostly confined to the house, but as the weather became warmer, he could, if allowed to take his own time, walk about three or four miles in the day. Whatever promoted expectoration, usually produced a temporary relief of the dyspnœa. He described the expectorated matter as having sometimes assumed an arborescent appearance. His death took place the 15th March, 1841. On the morning of the day of his death, whilst taking some bread and milk for breakfast, some particles of this food fell into the larynx, and he was suffocated in less than five minutes.

Inspection.—Muscles in front of the neck unusually developed. Lungs moderately distended, otherwise sound. Bronchial tubes filled with viscid mucous. Bronchial glands enlarged, one calcareous. Two ounces of fluid in the pericardium.

Trachea.—"A singularly well-defined constriction, constituting complete stricture, was discovered just below the cricoid cartilage, the calibre of the strictured portion not exceeding that of a crow-quill, and at once disclosing the principal cause of the distressing symptoms during life. This partial obliteration of the canal was independent of any adventitious membrane, the product of either acute or chronic inflammatory action, as in croupy affections, and of the existence of any of the usual marks of inflammation. The tracheal rings, at the point of stricture, had entirely disappeared, and had been converted into a fibro-cellular tissue, whilst those below the constriction were much dilated beyond their natural circumference, and had also to a certain extent lost their elastic and cartilaginous character. The larynx, when held perpendicularly, presented a more flattened appearance than natural, owing to the approximation of the alæ of the thyroid cartilage. This altered shape may probably be regarded as a consequence of the stricture in the trachea, and it no doubt in some degree added to the difficulty of breathing. The epiglottis showed marks of having been attacked with ulceration at some former period; the only vestiges of it remaining were two or three small irregular vegetations. The lining membrane within the larynx was slightly thickened, pale, and rather thickly smeared with a viscid muco-puriform fluid, but it presented no appearance of ever having been the seat of ulceration." 225.

Dr. J. Copland adds in a note:—

"By the permission of Mr. Worthington, the trachea, sent by him with his paper to the Society, was slit open in the middle of the membranous portion by Mr. Shaw. Its inner surface presented superficial cicatrices extending both below and above the strictured portion. The cicatriced surface was smooth, although somewhat irregular, and of a serous or polished appearance; showing that the ulceration had healed long previously to death. The cartilaginous rings of the trachea were entirely absorbed from about half an inch below the thryoid cartilage downwards to the extent of about three inches. The upper part of the trachea that had thus lost the antagonizing power to the transverse fibrous structure, was constricted so as to admit only a crow-quill. The inner surface of the constricted part was quite smooth. The larynx was sound; but the inner surface of its base and the commencement of the trachea presented superficial, slight, and old cicatrices. The trachea was much dilated from a little below the strictured part, to the bifurcation, and its internal surface presented the superficial cicatrices already mentioned." 226.

Mr. Worthington suggests that the tracheal disease was probably of syphilitic origin. On this point we do not agree with him. The disease of the nasal bones, as well as tracheal ulceration, were no doubt mercurial, for we disbelieve the tendency of syphilis alone to give rise to such lesions. As it happened, tracheotomy might have saved the patient, but, of course, it was impossible to say what was the exact site of the contraction. The probabilities, however, in such a case, would point to the larynx or its immediate vicinity.

XII. HISTORY OF A REMARKABLE CASE OF TUMOURS, DEVELOPED ON THE HEAD AND FACE, ACCOMPANIED WITH A SIMILAR DISEASE IN THE ABDOMEN. By *Henry Ancell*, Surgeon to the Western General Dispensary.

This is a very curious case, related with great precision and clearness, by Mr. Ancell.

Frances Massenger, unmarried, aged 52, applied at the Dispensary, May, 1840. We know not how we can satisfactorily condense the following description:—

"The greater part of the scalp and face was loaded with solid tumours. Those on the scalp were externally of a very florid colour, smooth, glossy, and denuded of hair. They varied from a pin's head to a horse chesnut in size, and from a nearly globular to an irregular flattened spheriodal form, with a tendency to assume a mammillated outline. A few tumours, perfectly round in shape, and of a violet hue, were interspersed; forming a remarkable contrast to the former, and never attaining so large a size. Their colour evidently depended upon their vascularity, vessels containing red blood being observed ramifying upon the parietes of those which were red, and larger vessels containing dark blood upon the violet ones; but their texture possessed a considerable degree of transparency, and there was, accordingly, an appearance of greater general vascularity than really existed. They were deprived of much of their colour on slight compression, but on suspending this the blood returned rapidly, so as to restore them to their natural hue. Some were sessile on broad bases. Others, including many of the largest, were appended to the scalp by short thick peduncles. One of the latter having been removed by incision, and divided diagonally, was nearly of a carti-

laginous consistence. It exhibited a smooth, shining, semi-transparent texture, of a very pale pinkish hue, and was apparently homogenous, except that a few distinct vessels, from which blood could be easily pressed, ramified through it. There was much greater vascularity in the investing skin than in the tumour itself. The scalpel employed was not rendered in the slightest degree greasy, and scarcely even soiled. The portions of the scalp from which the tumour was removed bled rather freely. One of the blue variety had been in the right ear for years, completely filling the meatus, and occasioning deafness. These tumours sometimes itched: considerable pain was excited by pinching them; and the patient's statement was, that 'just before rain they shoot and leap a good deal,' but otherwise they were free from uneasiness. Tumours of this nature covered a great portion of the hairy scalp and forehead, and numerous small ones were scattered over the face, but here they were mixed with tubercles, which differed from them in their general characteristics, as will presently be described.

"One of these tumours was re-examined after being kept about a fortnight in Goaltby's saline solution. The texture now presented more of a granular appearance; and although the integuments were very thin and semi-transparent, they formed an indistinct capsule, which could be torn from the subjacent parenchyma, leaving a very rough surface. A small portion of the substance from the interior having been opened out with a needle, placed between two plates of glass, compressed into a very thin stratum, and examined under the microscope with a glass an eighth of an inch focus, had, in the mass, an obscure cellular structure, and surrounding and attached to it were several distinct, nearly circular, nucleated globules, resembling those figured by Müller as characteristic of one variety of encephaloid disease.

"The skin of the face, neck, and shoulders had a remarkable tawny aspect, and was very course and rough, the roughness depending almost entirely upon numerous tubercles before alluded to, many of them extremely minute, others as large as a split pea, and of all intermediate dimensions. They were most thickly set about the nose, eyebrows and ears. The larger had all the characters of lenticular tubercles, depending upon hypertrophy of the dermis, since they were smooth and very hard, of the same colour as the surrounding skin, and no sebaceous matter could be pressed out of them. Most of the smaller ones were manifestly follicular elevations, such as accompany other cutaneous diseases; they were a few shades whiter than the surrounding skin, resembling acne punctata without the black point, and exuding on pressure a white substance, similar to curdled milk." 230.

She was a native of Leicestershire, worked in the fields, had first seen the disease at 14 or 15 years of age, but had found a great many small tumours grow during the last year or two. The late Mr. Rose, of St. George's Hospital, extirpated some of the tumours. In July, 1826, she applied to Mr. Bryant, who, at one sitting, removed sixty. They were then less firm, and, on making a longitudinal incision, their contents were easily turned out. Within twelve months, the tumours were all reproduced. About five months previously to her application to Mr. Ancell, she discovered a hardness in the abdomen. On examination, an uneven tumour was detected in the right hypochondrium, where, at times, she experienced pain.

After a time ascites occurred, followed by anasarca of the lower extremities. The anasarcous limbs inflamed and sphacelated, and she sank exhausted in February, 1842.

Her grandmother was affected with similar growths on the head. Her mother had a large one in the same place, and died dropsical at the age of

79, leaving a large family. Her younger sister has had a mammary tumour extirpated. Her eldest sister, aged sixty-four, is free from the disease. She has had fifteen children, most of whom are married; two of her daughters have each twelve children; and she has more than forty grandchildren and four great-grandchildren living; the whole of this branch of the family being exempt. Another sister, aged sixty-two, is affected with a large crop of tumours on the head, forehead, temples, and about the ears. They resemble the larger vascular tumours in the present case. She is the mother of a large family, several of whom, including two sons, are similarly affected. In no instance has the disease been transmitted by the males of the family.

Inspection.—The peritoneum "was generally opaque, but with a shining surface. The portion lining the abdominal parietes was very considerably thickened and indurated: it was also studded with myriads of tumours, projecting into its cavity, many of them not greatly varying from the size of peas, and the whole producing a yellowish granulated appearance. The peritoneal surface of the diaphragm was thickened and studded with similar tumours, either in patches from the size of pins' heads to that of small peas, closely huddled together and compressing each other; or more thinly set, very minute, white and semi-transparent."

The minute specks were sessile, and in many instances scarcely, if at all, raised above the surface; but all the larger ones tended to become pendulous and some were completely so, hanging by short necks." 234.

Mr. Ancell thinks there can be little doubt that the affection was seated in the cellular aspect of the peritoneum.

In the *great omentum*, from which the fat had been greatly absorbed, there were numberless granules about the size of pins' heads, with larger masses generally of a globular form, nearly white, or looking like schoolboys' veined marbles.

In the mesentery were much larger, and more irregular masses. A few mesenteric glands were slightly hypertrophied, and the surface of the intestines was speckled with the minute granules.

"The peritoneal coating of the superior surface of the liver was thickened, opaque, and free from the deposit; but attached to the anterior edge of this viscus, in a manner suspended from it, and extending beneath the right lobe, displacing and pressing the gall bladder downwards into Glisson's capsule, a very large mass was found, weighing perhaps two pounds. It had evidently been deposited between the layers of peritoneum at the anterior edge of the liver, since the membrane was continuous from the surface of the organ over the tumour, the whole of which it enclosed as a capsule. The thin edge of the liver was however spread to a considerable extent over the upper and anterior parts of the surface of the tumour. The gall-bladder was stretched along its under surface. Two or three small deposites were also observed near the larger mass, but isolated in the substance of the organ, and a great number of the pendulous tumours were attached to the loose cellular membrane which surrounded these parts and to that which constitutes Glisson's capsule. The divided surfaces of these smaller tumours presented an appearance similar to those of the vascular tumours on the head and face." 237.

"The large tumour was of an irregular ovoid form, with a nodulated surface. It possessed a very firm texture. The scalpel with which it was divided diagonally was not soiled in the slightest degree. The tints presented by the cut sur-

faces were extremely varied, green and greenish-yellow predominating. It was nearly white, and almost cartilaginous at its centre, and there were distinct fibrous radii, of irregular dimensions, proceeding from the centre towards the circumference. The remainder of its substance was made up of large lobules, varying in size, and these again presented an indistinctly cystiform aspect in their interior and outline." *Ib.*

The tumour could not be called highly vascular.

Much limpid fluid in the ventricles and between the membranes of the brain. A tumour of the size of a pea, and another much larger, in the substance of the uterus.

"Some of the profession who saw the external tumours designated them molluscum, others vascular sarcoma, and the terms scirrhus, fungoid growth, encephaloid in a crude state, albuminous sarcoma, and colloid cancer, have been applied to the internal disease. Mr. Kiernan made the section of the large mass, but declined giving it any name." 238.

Mr. Kiernan was wise in his generation. For certainly there is no one class of cutaneous complaints to which this can be fairly said to belong. Mr. Ancell makes many just observations on the nosological characters and position of the case, for which we must refer to the original. He concludes thus:—

"Upon the whole, then, it would appear, that there exists a diathesis or state of constitution subject to an aberration of the nutrition of various parts, or a particular tissue, and that the local aberration as well as the diathesis are deficient in some of the characteristics of cancer, although, from the similitude in anatomical structure of the diseased tissue to true scirrhus, attended with symptoms of cancerous cachexia, we can but suspect that, owing to causes superadded, these growths are liable to become carcinomatous and destructive." 246.

XIII. Account of a Case of Irregular Formation of the Heart, accompanied with a Supernumerary Valve in the Pulmonary Artery. By *Theophilus Thompson*, M. D. Physician to the Northern Dispensary.

In December, 1841, Dr. Thompson visited, as a dispensary patient A. H., unmarried, aged 38. She was sitting up, drowsy, livid, with the external jugular veins much distended, pulse rapid and feeble, impulse of heart rather weak; the first sound shorter and more flapping, the second less distinct than natural, and both sounds unattended with roughness. There was anasarca. This increased, the legs became gangrenous, and she died in the second week in January.

She had been pretty well till attacked with the Asiatic cholera, durng its prevalence, after which she complained occasionally of palpitation Two years before death she had "black fever," from which time she iex hibited the lividity and drowsiness, &c.

Inspection. Some effusion into the peritoneum, pleura, and pericardium, and serous infiltration, with redness, of the bronchial tubes.

"The heart was larger than natural, and exhibited a circumscribed dilatation at the part of the right ventricle more immediately connected with the pulmonary artery. On making an incision from that artery along the anterior part of the

ventricle, four pulmonary valves were observed, but the tricuspid valve was not visible. A second incision parallel to the first was then made at the back part of the ventricle, by which means the tricuspid valve was discovered, separating the right auricle from a cavity corresponding in size and appearance to the right ventricle in its natural condition, excepting that the valves of the pulmonary artery were not seen. It was now obvious that the two cavities just described constituted the right ventricle, which was divided into two portions by an imperfect septum. This septum was composed, not of a uniform fleshy wall, but of decussating and hypertrophied columnæ carneæ: some of which separating from each other near the base of the ventricle, left an aperture of communication about an inch long, and half an inch broad. Nearer the apex there were other small interstices amongst the columns, through which, although by a tortuous and difficult course, a small quantity of blood might probably have passed from one cavity to the other. The arterial chamber of the right ventricle was rather less spacious than that adjoining the auricle; the connecting orifice was partially covered by one of the divisions of the tricuspid valve.

"The walls of the left auricle and of both the ventricles, were of natural thickness; but the right auricle was twice as thick as the left, and with very large and prominent musculi pectinati. The columnæ carneæ of the left ventricle appeared singularly small when compared with those of the right. The four valves of the pulmonary artery were found on admeasurement equal in size. Each of the valves was well developed, furnished with a corpus sesamoideum, and about nine-tenths of an inch in diameter. As each of the valves was of natural size, an additional valve was rendered necessary by the preternatural magnitude of the pulmonary artery, the circumference of which exceeded that of the aorta by nearly an inch.

"The divided valve, and that adjoining, rest on a fleshy column, nearly an inch in thickness.

"It may be well to add, in reference to the chamber of the right ventricle contiguous to the auricle, that the portion of the tricuspid valve, near the coronary vein, is attached by tendinous cords, an inch long, to hypertrophied columns, forming the inner side of the aperture connecting the ventricular chambers. The other portion of this segment, and the adjoining segment through which the incision was made, possess tendinous cords only half as long, and attached to columns of average size. The intermediate portion of the tricuspid valve has cords of intermediate length, all of which are attached to one projecting thickened column, excepting that from the edge of the valve, covering the connecting isthmus, a few cords pass to the inner side of the ring, within half an inch of one of the semilunar valves." 250.

Dr. Thompson observes that irregularities in the number of the semilunar valves are rare. He refers to several, and to the sort of law laid down by Meckel—that if augmented in number they are diminished in size, and vice versâ. In the present case this was not so, a perfect valve being added, while the supplementary ventricular cavity is interesting. This probably congenital malformation was of little moment till the muscular energy was impaired, when the heart suffered embarrassment, in consequence of the indirect course of the blood through its right cavities; and when the supervention of bronchial affection interrupted the circulation of blood through the lungs, a livid complexion, œdema, and gradual exhaustion of strength, were the natural results.

XIV. NOTES OF A CASE OF PETECHIAL COW-POX, WITH OBSERVATIONS ON THE DEVELOPMENT OF THE HÆMORRHAGIC DIATHESIS. By *George Gregory*, M.D. Physician of the Small-pox and Vaccination Hospital.

May 19, 1842, Mary Ann Webb, aged 4, a fine child, "was vaccinated at the Small-Pox Hospital, by Mr. Marson, in five places on the left arm. The child was at the time apparently in perfect health. Her brother James, aged six, and her sister Jane, aged one year and a half, were vaccinated at the same time. The lymph for all the three children was supplied from the same source, an unexceptionable eight-day vesicle.

"On Sunday, May 23d, the mother first perceived that the arm of the child Mary Ann presented some unusual characters. It appeared to her more inflamed than the arms of the other children, and she noticed at the same time some spots on the child's face. The child, however, made no complaints, and in all other respects enjoyed its usual state of health. On Thursday, May 6th, being the eighth day, the child walked to the hospital and back without feeling fatigued. The vesicles on that day appeared dark, as if filled with blood; the areola was of a mahogany colour, obviously from ecchymosis; and numerous petechiæ were dispersed over the whole body, more especially the face, neck, and arms. There were several patches of ecchymosis on the tibia. The child's appetite and sleep were unimpaired.

"On the following day, Friday, the 27th May, I first saw the child. The outer portions of a large areolous circle had assumed a yellowish tint, while the inner portions were still of a dark mahogany colour. The vesicles themselves were jet black. It was obvious that there had been extensive ecchymosis around the incisions, which was in process of absorption. The petechiæ over the body were numerous. On the left temple there was a very large extravasation of blood, owing to a slight bruise which the child had received. There had been some bleeding from the left ear, and a few drops of blood had escaped from the nostril. The child's general health was good. The bowels had acted freely from medicine taken the preceding day. No blood was perceptible in the motions.

"The brother and sister of the child were passing through the cow-pox in a perfectly normal manner.

"Dr. A. Todd Thomson, Dr. Quain, Mr. Davis of Hampstead, Mr. Porter, and other gentlemen, visited the child on this and the three succeeding days. The ecchymosed state of the arm, and the petechiæ, declined with the decline of the cow-pock. On Friday, June 3rd, (the sixteenth day of vaccination,) all hæmorrhagic appearances had ceased. Two scabs had fallen off, leaving good cicatrices. Three others, hard, and of a jet black colour, still adhered. The child was in perfect health."

The child had cut its teeth with fits, had not passed through measles or scarlet fever, and had never been seriously ill.

Dr. Gregory makes some interesting observations, tending to the point that the hæmorrhagic diathesis in this case was the result of the introduction of the vaccine as of any other morbid poison. Dr. Gregory had never previously seen such a case. But Mr. Gardener, of Great Portland street, a very intelligent practitioner, saw a case of this kind some years

ago in Westminster. In the Museum of Guy's Hospital there is a wax model, (No. 2,705) described as "The arm of a young man affected with purpura, consequent to vaccination." In this, however, the eruption is of an anomalous character, in large circular patches, and the vaccine vesicles are not filled with blood. Dr. G. would rather characterize this as "a case of adult vaccination performed in a very unhealthy state of the system."

Of petechial small-pox Dr. Gregory has seen many instances. It is generally fatal. He notices the important distinction that subsists between cases of petechial cow-pox and those wherein the vesicles generally or partially fill with blood from the violence of the local inflammatory action. The latter he has frequently witnessed.

XV. ON ACUTE ULCERATION OF THE DUODENUM, IN CASES OF BURN.

By *T. B. Curling*, Lecturer on Surgery and Assistant Surgeon, London Hospital.

Mr. Curling observes that, so obscure are diseases in the duodenum, that authentic instances may throw light on them. He relates twelve cases. We will not notice all, but only the more leading ones.

CASE 1.—*Extensive Burn—Ulceration of the Duodenum—Fatal Hæmatemesis.*

M. A. Fox, a girl aged 11, was brought to the London Hospital, May 9th, 1841, on account of a severe burn on the chest and both arms, the skin of which was extensively destroyed. She had apparently been going on tolerably well until the 27th, when there occurred profuse hæmatemesis. She afterwards repeatedly ejected blood from h · mou n, and also passed some by stool, and notwithstanding the remedies employed, expired in fifteen hours after first vomiting blood.

Inspection. "In the duodenum, at the distance of an inch from the pylorus, there was a circular ulcer about half an inch in diameter, and its edges slightly elevated, which had extended through all the coats of the intestine, the bottom of the ulcer being formed by the glandular substance of the pancreas, which was closely united to the duodenum at that part. The open mouth of a considerable-sized vessel could be distinctly seen at the base of the ulcer, apparently on the surface of the pancreas. There was no further disease of the intestinal canal, but it contained a good deal of dark-coloured blood mixed with the fæces." 261.

CASE 2.—*Extensive Burn—Perforating Ulcer in the Duodenum—Death from Hæmorrhage.*

"A fine male child, aged 4 years, was admitted into the London Hospital, Sept. 11th, 1840, under the care of Mr. Luke, having sustained an extensive burn on the neck, chest, and both arms. The case was treated in the usual way, but on the 24th, about 11 A.M., after complaining of heat and pain in the abdomen, he vomited about half a pint of blood, and afterwards continued to pass blood by stool at different periods till his death, which occurred on the following day, in the evening, after a convulsive fit. The bowels were not relaxed previously to the hæmorrhage. 262.

Inspection. "A large solitary ulcer was found at the posterior part of the

duodenum where it passes in front of the head of the pancreas. This ulcer was of an irregular form, and three quarters of an inch in diameter at its broadest part. It had destroyed the whole of the coats of the gut, so that its base was formed by the pancreas. So slight was the connection of the margin of the ulcer to this gland, that in disturbing the parts in their removal, the border of the ulcer gave way, and allowed the escape of a portion of the contents of the duodenum into the cavity of the abdomen. The edges of the ulcer were smooth and elevated. A large blood-vessel was distinctly seen running across the base of the ulcer in a transverse direction. The anterior part of the parietes of this vessel was destroyed, so that the remains presented merely a grove or channel, which terminated near the edges of the ulcer, at the opposite sides, in open mouths." 263.

The follicles throughout the intestines were well developed.

The *third* case was one of fatal burn, with perforating ulcer of the duodenum. The patient died on the tenth day, having passed blood by stool shortly before death.

Mr. Curling relates several other cases, but as they all point to the same fact, the connexion between inflammation of the duodenum, and its consequences, and burn, it is scarcely necessary to detail them.

Mr. Curling seems to think that liability of the duodenum to suffer in cases of burn depends on some peculiar sympathy between the glands of Brunner and the skin. He argues:—

"The duodenum is furnished with peculiar glands, the true glands of Brunner, which abound in that particular part of the intestine, the seat of disease, and though their office and the nature and uses of their secretion have not been well ascertained, their size and number indicate that they must be capable of pouring out a large quantity of fluid, and that their functions in the economy are by no means unimportant. Now it is seldom that the secretions of any organ can be suddenly stopped without injurious consequences resulting, and considering the importance of those of the skin, and the continuity of this structure with the mucous surface of the alimentary canal, we can scarcely be surprised that the duodenal glands should sympathise and endeavour, by an increased action, to compensate for the suppression of the exhalation from the skin, and that the irritation consequent thereon should often lead to inflammation and ulceration." 277.

If we may trust to M. Cruveilhier, the glands of Brunner, in the duodenum are like the labial and buccal glands, salivary. Certainly glands of that description are not prone to disease. Nor does Mr. Curling offer any satisfactory proofs, drawn from dissection, of this theory. Now, however, that attention is drawn to the subject, it may be narrowly looked into. We confess that we are inclined to regard congestion of the mucous membrane as the real origo mali. Be this as it may, it is well that the profession should be alive to the occurrence of duodenal mischief in these cases. As Mr. Curling very justly observes:—

"It has been noticed by authors, that in cases of extensive burn, patients often appear to be going on well, the constitution seeming to bear up against its destructive effects when the powers suddenly give way, and the patient rapidly sinks. In many of these cases if inquiry had been made, it would very probably have been found that the unfavourable change had resulted from the occurrence of hæmorrhage or perforation from an ulcer in the duodenum. Indeed, in two cases which have come under my notice, the surgeon in attendance was quite unaware of there being any bleeding from the bowels, the nurse having neglected to inform him of the alteration in the appearance of the stools." 276.

XVI. OBSERVATIONS ON A PARTICULAR FORM OF ENCYSTED TUMOUR, WHICH OCCURS IN THE NECK, BUT IS NOT NECESSARILY CONNECTED WITH THE THYROID BODY. By *Benjamin Phillips*, F.R.S. Surgeon to the St. Marylebone Infirmary. &c.

Mr. Phillips describes what Maunoir of Geneva had described before as *Hydrocele of the Neck*, and has been described also by Mr. Hill of Dumfries, Dr. O'Beirne and others. The following is his summary drawn from the cases of all.

"The cases which I have detailed, as well as those described by the authors I have named, justify me in stating, that there is a class of unilocular or multilocular encysted tumours developed in the neck, which contain a serous fluid, varying from a light yellow to a deep coffee-colour; that in its nature this fluid is albuminous, coagulable by heat; that those tumours are generally developed, quite independently of the thyroid body, though in their progress they may become intimately connected with it, but that the connection does not usually involve any change of structure in that organ; that they are most frequently developed at, or after, the middle period of life; that they occur almost indiscriminately in both sexes; that they are almost always of slow growth, and that they often attain a large size; that they do not usually prove troublesome, until they are of sufficient size to interfere with respiration or deglutition. That the treatment by simple puncture, so as to evacuate their contents, is usually insufficient to cure the disease, because the opening is apt to close up in the cavity to refill; that puncture, with injection, has not succeeded better, and for this reason, either the fluid is too stimulating, and produces violent inflammation with spasmodic action of the organs of respiration and deglutition, or it does not exercise sufficient action to modify the surface of the sac; and it is not easy to ascertain the just medium; that the treatment by making an incision of sufficient extent to expose the greater part of the interior of the sac, and stuffing the cavity, has been followed by too much local and constitutional irritation to render it prudent to adopt it as an ordinary method of cure; that the plan which has succeeded best is that to which Mr. Hill, of Dumfries, resorted, and which has been emp'oyed by M. Maunoir, Dr. O'Beirne, and Petrale, namely, puncture and seton. Whether an ordinary tent passed through the long diameter of the sac, after puncture, might not answer the purpose equally well, we have not yet the necessary experience to determine, but I see no reason why it should not succeed." 303.

He relates, himself, two cases. In the first, the cyst discharged itself through a puncture, made with an exploring needle. The fluid, in the first instance was thin and bloody, then became bright red, and reduced the strength of the patient as well as the size of the tumour. Next the discharge became sero-purulent, and lastly purulent. It stopped under the influence of time, or quiet and swallowing ice. The patient recovered, the tumour having lessened very much, but the thyroid body remaining enlarged.

In the second case the tumour cracked spontaneously, and about three pints of reddish serous fluid escaped. On the following night three pints more escaped. A sero-purulent discharge flowed for many weeks, when she recovered, an inconsiderable enlargement of the thyroid body remaining. Twelve months afterwards, there had been no re-accumulation of fluid in the sac, but the enlargement of the thyroid body still continued, and a small fistulous communication with the sac remained. We fancy that this affection is not very uncommon.

DIE LEHRE VON DER REFLEX-FUNCTION FÜR PHYSIOLOGEN UND AERZTE; Dargestellt und beurtheilt von *Johann Wilhelm Arnold*. The Theory of the Reflex Function, represented and examined by John Wm. Arnold. *Heidelberg*, 1842.

THE object of this book seems to be neither more nor less, than to prove, that the Theory of the Reflex-Function, which from its novelty has made of late years so great a noise in the scientific world, is no novelty at all; and that the facts upon which the modern abettors of this theory have erected it, were as well known to several of the old physiologists, as to those of the present day. The author indeed goes so far as to state, that, if M. Hall and J. Müller had studied the history of their science with sufficient care, we should have been spared much of the trouble and fuss occasioned by the regeneration of a doctrine "as old as the hills."

In his first Chapter the author presents us with a very succinct view of the *Reflex Theory of Hall and Müller*. Hall distinguishes four species of muscular motion. The *first* is the *Voluntary*: the will, taking its origin in the brain, and free in its action, extends its influence along the spinal chord and the moving nerves in a direct line to the voluntary muscles. The *second* is the *Respiratory*, which has its origin in the medulla oblongata. The *third* species of motion is the *Involuntary*; this depends on irritability and requires the immediate action of an irritant on the muscular fibres. These three species of muscular motion have been known for a long time, and were the only species known, according to Marshall Hall. According to this physiologist, however, there is a *fourth* species which still continues, after the voluntary and respiratory motions have ceased by the removal of the brain and medulla oblongata; this species of motion is connected with the spinal marrow, and disappears as soon as this organ is taken away, though irritability still continues. In this species of muscular motion the acting influence exists not in a central part of the nervous system, but at a distance from it. It is neither voluntary in its action, nor direct in its course; it is, on the contrary, excited by peculiar stimuli, which, however, do not come into immediate contact with the muscular fibre, but with certain membranous parts, from whence the impression is conducted to the spinal marrow, is thence reflected, and either again reaches the part on which the impression took place, or some other part remote from it, where muscular contractions now take place. This is M. Hall's reflex-motion. It exists as an uninterrupted muscular action, as a power which presides over organs, which are not really in a state of motion, and in some, as in the larynx, it presides over, and preserves an opening, whilst in other parts, as in the sphincter muscles, it keeps the organs closed. In the reflex-function the muscles are exited by a stimulus, which is conducted mediately and indirectly in an arched and reflected course along the superficial nerves under the skin and mucous membrane to the spinal marrow, and along the muscular nerves from the spinal marrow. The motion that takes place in this way requires, that the connection with the spinal marrow be uninjured. M. Hall supported his theory chiefly by experiments on cold-blooded animals, which go to show, that, after decapitation, suitable and determinate motions take place in consequence *of the* action of external stimuli, but

not from free impulse, but that these motions cease, as soon as the spinal marrow is removed. M. Hall draws from his experiments with decapitated animals the following conclusions, which are to serve as supports and illustrations of his theory.

1st. Sensation can act for the production of muscular motion only by means of the will.

2nd. In the experiments with the removal of the brain and medulla oblongata, the will is no doubt abolished, but not the moving power.

3rd. In cases where sensation is shut out and the will is abolished, the external impressions which occasion pain, act on a property of the nervous system which is different from sensation.

The observation according to which frogs and salamanders thrown into a state of rigid spasm by nux vomica or opium, may be divided into three parts, namely, the head, the anterior, and the posterior extremities, without the increased irritability and spasm ceasing, should, according to M. Hall, sufficiently prove, that the phenomena, which he ascribed to the reflex-function, depend neither on sensation, nor on the will, nor on irritability. He considers it evident that the spasmodic phenomena in tetanus are no voluntary motions, that they obey the same laws as those motions which are observed in an animal slightly affected with tetanus, or in parts of such an animal under the influence of stimuli. It is, according to him, equally clear, that phenomena which depend on the excitement of irritability, would not cease, as long as this irritability continues uninjured. M. Hall connects with his reflex-theory a peculiar theory on the structure of the nervous system, namely, of the spinal marrow and its nerves. He assumes, for instance, an excito-motory nervous system, and from his experiments infers the existence: 1st, Of a proper spinal marrow which is physiologically distinct from the chord of the intro-spinal nerves; 2, of a system of excito-motory nerves, physiologically distinct from that of the sensitive and voluntary nerves; 3, of a nervous power, the excito-motory power, which acts, being thrown in an incident direction, upwards, downwards, and backwards, in reference to the proper spinal marrow, the centre of the excito-motory system.

Thus then the entire spinal marrow in vertebrated animals consists of two parts, the first being the intervertebral chord of sensitive and voluntary nerves, which go to and from the brain, as their middle point; the second has been called the true spinal marrow and is excito-motory. This is the axis of the system of excito-motory nerves, which are generally, but probably not invariably, connected with the former.

The parts of the excito-motory system of M. Hall are: 1. The incident excitory branches: 1. The trifacial,—2. The pneumo-gastric.—3. The posterior spinal nerves.

2. The true medulla oblongata and spinal marrow, the middle point of this system.

3. The reflecting, moving branches, as the trochlearis, abducens oculi, &c. &c.

Among the Germans, J. Müller was the first who advocated this theory. He differs, however, on many points from M. Hall. His views on reflexion are as follows: when sensations which are effected through external stimuli on nerves of sensation, produce motions in other parts, this never

takes place through the reciprocal action of the sensitive and motory fibres of a nerve, but by the sensorial excitement acting on the brain and spinal marrow, and from this back on the motory fibres. The phenomenon of general convulsions after local sensations is independent of the N. sympatheticus, and is occasioned by an irritation of the spinal marrow, whereby every local, sensorio-centripetal excitement transplants itself to the entire spinal marrow and brain, and thence necessarily excites all the motory fibres. But in very many cases after local irritation of the nerves, not general but local, convulsive twitches are occasioned, which, however, must always be explained, and accounted for, through the spinal marrow, as the connecting medium between the sensorial and motory fibres. With respect to M. Hall's view, according to which no sensation takes place in the case of motions communicated through the spinal marrow, J. Müller thinks, that the reflected motions which take place on the application of stimuli to the skin after the removal of the brain, contain no proof that cutaneous irritants are still capable of exciting true sensation in the spinal marrow; it is rather the centripetal conducting of the nervous principle which ordinarily takes place in the case of sensations, but which in this case is no longer a sensation, as it is no longer conducted to the brain, the organ of consciousness. During health many reflected motions follow through cutaneous irritants, which do not reach consciousness, as true sensations, but still are capable of making violent impressions on the spinal marrow. But Müller thinks that M. Hall goes too far in assuming that, in health, every motion in consequence of a true sensation is produced by the will, and that all excitements of sensible parts in reflected motions are without sensation; for the reflected motions of sneezing, coughing, and several others follow from real sensation. According to Müller an irritation of a sensorio-spinal nerve in the first instance effects a centripetal action of the nervous principle towards the spinal marrow. If this can reach the sensorium, it is a sensation, attended with consciousness. But if, on account of a division of the spinal marrow, it does not reach the sensorium commune, it still retains its entire power as a centripetal action to the spinal marrow. In both cases, a centripetal action of a sensorial nerve may produce a reflex motion. In the former case the centripetal action would be at the same time a sensation, in the latter not, but it suffices for a reflex-motion. We possess, according to Müller, no certain facts to prove that the spinal marrow is endowed with sensation independently of the brain and medulla oblongata. Reflex-motions after cutaneous irritations in decapitated animals cannot, according to him, be reckoned among these, and if decapitated frogs evince, on the application of a cutaneous irritant, any thing determinate or suitable in their reaction, this phenomenon only occurs when the division through the spinal marrow occurs at its commencement.

With respect to the manner in which the spinal marrow is the connecting medium between a sensorial and motory motion of the nervous principle, Müller assumes that it is the easiest way of oscillation or vibration from the posterior root of a nerve or of its individual primitive fibres to its anterior root, or to the anterior roots of several adjacent nerves. The principle of the nerves in these vibrations or oscillations takes the readiest way, in order to act *from sensitive nerves* on motory fibres through the

spinal marrow. Another very usual track of conduction from sensitive nerves to motory nerves, through the medium of the spinal marrow and medulla oblongata, is that of excitation of the mucous system, and of the secondary affection of the respiratory muscles in vomiting, tenesmus, parturition, dysuria, coughing, sneezing, &c. Müller thinks, that there must be previously formed in the medulla oblongata and spinal marrow, between the sensitive nerves of the mucous system and the motory nerves of respiration an easier conduction, whilst, on the contrary, the spinal nerves going to the extremities are excluded from this harmony.

Müller distinguishes two principal groups of reflex-motions:—

A. Reflex-motions of the animal system, wherein he reckons the reflex-motions of the muscles supplied with cerebral and spinal nerves; the centripetal excitation may be produced in the animal or organic nerves, in the external skin, or in the intestinal canal.

B. Reflex-motions of the organic system. To these belong, according to him, the reflex-motions of the involuntary moving muscles; the centripetal excitation may now be transferred, first to the brain and spinal marrow from cerebral and spinal nerves, or may have proceeded from organs which are provided from the organic nervous system.

The laws of reflexion, which were established in the case of the cerebro-spinal nerves, hold good, according to Müller, likewise with respect to the sympathetic nerves; that is, violent impressions of sensation in parts supplied by the sympathetic may, when transferred to the spinal marrow, produce motions in parts supplied by cerebro-spinal nerves. Reflexion from impressions of sensation in parts provided by the sympathetic to the spinal marrow and brain, and from thence to the motory action of the sympathetic, takes place also, but in a less degree, than in the cerebro-spinal nerves. The reflexion also of effects or actions, which proceed from the cerebro-spinal nerves, are transferred to the spinal marrow, and from thence to the sympathetic nervous system, is, according to Müller, a tolerably frequent phenomenon. A reflecting power in the ganglia, in the case of sympathetic sensations, according to the same author, is not proved, and several facts are opposed to it. He even assumes it as probable, that the brain and spinal marrow are the connecting medium, when secretions follow in distant parts after sensations through reflexion.

In order clearly to understand Müller's views concerning reflex-motion it is necessary to consider how, according to him, the voluntary motions take place; as also his physiology of the spinal chord. The spinal nerves are, according to him, capable of voluntary determination, in this way; the fibres of the spinal nerves ascend upwards in the spinal marrow, and are exposed to the influence of the will in the medulla oblongata, the source of all voluntary motion. On the other hand, the activity of the motory cerebral nerves receives the impulse to voluntary motions from the medulla oblongata. We may suppose that, in this part of the brain, the fibres of all the motory cerebral nerves and of the spinal nerves are unfolded. The will puts these fibrous origins into action, like the keys of a harpsichord. To the voluntary motion there is wanting only the excitement of a vibration or an oscillation in the origins of a certain quantity of the fibres of the medulla oblongata. All the rest is mere mechanism. In *another* place, Müller designates the brain as the source of sensations and

voluntary motions, when he says: the brain receives the impressions of all the sensitive fibres of the entire system, becomes conscious of them, and knows the place of the sensation according to the affection of the various primitive fibres; the brain again excites the motory powers of all the motory primitive fibres and of the spinal marrow in the case of voluntary motion. So various is the power, and still so similar is the action of the brain in exciting a certain part under the immense number of primitive fibres to the playing of a many-stringed instrument, the strings of which sound as the keys are touched. The mind is the performer, the primitive fibres of all the nerves, which are diffused over the brain, are the strings, and the commencements of these are the keys.

In man and the higher animals the spinal marrow, according to Müller, bears exactly the same relation to the brain, that all the cerebral nerves bear to it, and the spinal marrow is to be considered as a common stock of all the nerves of the trunk, though it still possesses peculiar powers before the nervous stems. The spinal marrow represents not only all the nerves of the trunk in general in the brain, but also the individual primitive fibres of the nerves of the trunk. The primitive fibres of the nervous stocks which enter into the spinal marrow, are not bound together, according to him in the spinal marrow, but proceed in a direction parallel to each other, as in the stock of a nerve, to the brain, in order that thus isolated and separate, they may impart to this organ local sensations, and that in this isolated state also they may receive excitation for motion. For, says Müller, if the primitive fibres of the nerves were bound together in the spinal marrow, a local sensation in the trunk would be just as little possible, as a separate and isolated contraction of separate muscles on the trunk. The seat of the sensations is neither in the nerves, which bring to the brain the oscillations or vibrations of the nervous principle necessary thereto, nor in the spinal marrow, which conducts these effects or actions, like nerves, to the sensorium commune; this takes place only through the action of the fibres of the nerves and of the spinal marrow on the sensorium commune. But the spinal marrow serves not only as a conductor of the fibres of the nerves to the brain, but appears also as part of the central organ. As such, it possesses the power of reflecting the sensorial irritations of its sensitive nerves to the motor nerves. It possesses also the property, whereby motions follow a sensation, without both kinds of nerves communicating by their primitive fibres, a property possessed by no nerve that is separated from the central parts. The spinal marrow is capable of reflexion from nerves of sensation to nerves of motion without itself possessing sensation.

Views of Several Physiologists of Modern Times on the Reflex Theory.

Volkmann,* though he values highly the very important discoveries of

* See Medico-Chirurgical Review, No. for July, 1838, where an analysis of Volkmann's Paper may be *found.—Rev.*

M. Hall, still considers many of his conclusions not well grounded. He first objects to the assertion that decapitated animals continue at rest in the place where they are put, and continue therein unchanged to the extinction of the very last spark of life. He has proved also by experiments that a longitudinal division of the spinal marrow does not prevent the extension of the reflex-motions over all the muscles of both halves of the body, so long as any part of the proper spinal marrow continues connected in the middle line. He also infers from his experiments that the reflex-motions have the character of aiming at some end, that their extension depends chiefly on the strength of the irritant and on the degree of irritability; that in the reflex-functions the posterior roots of the spinal nerves serve exclusively as exciting, the anterior exclusively as reflecting nerves; that the activity of the irritants which produce reflex-motions, is modified and increased by the peripheric expansion of the nerves; that irritation of the sympathetic nerves of frogs excites widely extended reflex motions; that the conducting of the nervous principle from the periphery to the central organs and from there backwards to the peripheric nervous expansions, is not subject to the same laws as the conducting process in the nerves, it not being confined to the course of the nerves. According to Volkmann the present state of our knowledge is not sufficient to prove that all the reflex motions of decapitated animals, and especially of decapitated amphibia, go on without the co-operation of mind, as the principle of sensation and of the will.

Carus is the next physiologist whose opinions on the reflex-function are worth considering. With respect to the term "reflexion," he says that as a term it is unobjectionable, only that we should beware of introducing into nervous life the idea of some new distinct agent. According to Carus the spinal marrow contains not merely primitive fibres, but also a pulpy mass, and in so far peculiar feelings and reactions appertain to it just as much as the capability of conducting; nay, by this mass the oscillation of the primitive fibres passing through it must undergo a modification every time in a certain proportion. Hereby also it may be understood further why, when the oscillation of the innervation in the spinal marrow to the brain is interrupted by any cause, as, for instance, directly by dividing it, nevertheless, nervous feeling and re-action must still proceed from the spinal marrow itself. Carus rejects the division of the nerves into spontano-motory and reflecto-motory; he further says that, by M. Hall's theory, physiology has been encumbered with a number of superfluous names; he asserts that the admission of reflection, as a distinct power, is altogether needless. According to him nothing whatever occurs in this case in the central nervous system, but what occurs repeatedly and almost universally in the sympathetic nervous system, viz. that the sensible nervous oscillation, instead of proceeding along from the peripheric bending of the primitive fibres to the central bending, meets the nervous mass on its way, on which feeling is concentrated and immediately springs round to re-action, so that it extends itself from here through other radiating primary fibres back to the periphery, and gives rise to convulsive twitches, &c. &c. Several other distinguished physiologists have expressed themselves in very decided terms on the merits of the reflex theory. To detail

their opinions on this subject would be altogether out of place in our Journal.

With respect to the early use of the term "Reflex," we know that Haller has frequently used it in his Physiology. Unzer, who published a work on physiology in 1771, uses the term many times. His definition of reflexion is, a change of an external into an internal sensible impression. Treviranus also uses the term in his Biology or Philosophy of Living Nature, published at Göttingen, 1818. Fred. Arnold, in his work entitled Kopf-theil des Vegetativen Nervensystems, published in 1830, makes frequent use of the term reflexion; thus his experiments induced him to admit that the action of light does not take place immediately on the retina, but that it is *reflected* through the nervous expansion in the eye to the iris, and that this *bringing back* of the stimulus of light takes place through the brain. He also distinguishes the motions of the tympanum, which arise in consequence of an irritation *reflected* from the auditory nerve to the moving apparatus of this nerve, from those which immediately follow through the vibrations of the air. The sympathy of the thoracic and abdominal organs with the brain and organs of sense he also accounts for on the principle of reflexion.

When we come to consider *the Facts on which the Reflex-theory is founded*, we shall find that they possess still less of novelty than the theory itself. It is long known that the life of certain animals may sometimes continue for some time without a cerebrum and cerebellum, and that amphibious animals, after taking off their head, are still capable of making suitable movements; they seek to avoid injuries, and fly from dangers. Several facts appertaining to this point are to be found in Haller, Kaau, Boyle, &c. We shall here cite a few. Robert Whytt, proving that the nerves are the sole organs of sensation, says: if, immediately after decapitating a frog, one of the toes of the hind-foot be wounded, either very slight motion, or none at all takes place in the muscles of the foot. But if we pinch or wound this animal's toe ten or fifteen minutes after the head has been cut off, then, not only the muscles of the leg and thigh, but those of the entire body, are thrown into strong convulsion, and the frog sometimes springs up violently. In this case is not the irritation of the thigh, immediately after the head is cut off, ineffectual in producing any motion in the muscles of the thigh and foot, on account of the great pain occasioned by removing the head? Whereas the muscles are thrown into motion by wounding the toe fifteen minutes after removing the head, because the pain is now so much diminished, that it no longer prevents the animal from being sensible of the pain of his wounded toe.

Gilbert Blane also has quoted some facts which are very decisive on this point. Marshall Hall has quoted them in his work on the Nervous System. Their object is to show, that instinctive actions, even in animals possessing a brain and nerves, do not depend on sensation; that is, that instinctive or automatic acts may be performed without the intervention of the sensorium commune, and therefore without sensation or consciousness. Treviranus was induced, by experiments such as these, to deny the assumption that the faculty of association is merely a property of the brain. Legallois states it as a well-known and proved fact, that birds, whose

heads were cut off, continued to live and even to run about for some time after. Mayer also ascertained the fact that decapitated animals are still capable of performing determinate and suitable acts under the influence of irritants. Thus it is evident that the facts by which M. Hall supports his theory were well known long before his time, and were employed to throw light on the doctrine of the nervous system.

THE REFLEX-THEORY OF THE PHYSIOLOGISTS BEFORE M. HALL.

From what we have just seen regarding the use of the term "Reflex," and the early knowledge of the facts on which the reflex-theory rests, it is abundantly evident that the theory itself is not altogether new. Several authors might be adduced here, who at a very early period expressed themselves more or less in the sense of the reflex physiologists of modern times, and it might thence be shown that the facts on which this theory is now made to rest, were from a very early period explained in the natural way.

Haller distinguishes from the motion occasioned by muscular irritability those motions which take place when the head or brain has been removed or destroyed, and which continue as long as the mere spinal marrow or medulla oblongata remain. We have already seen that Sir Gilbert Blane was cognizant not only of the facts on which this theory rests, in the acknowledgment of M. Hall himself, but that he has expressly stated that instinctive or automatic motions may be performed without the intervention of the sensorium commune, and therefore without sensation or consciousness. Robert Whytt distinguished a feeling and a rational principle of the soul, and accounted for the phenomena which take place in decapitated animals in this manner: he said that the soul, not by rational motives, as in the case of the action of the brain, but by its feeling principle, perceives external irritants, and then acts on the organs. The various sympathetic phenomena, which are occasioned by irritants, are the consequence of particular sensations, which are evoked in certain organs, and thence transferred either to the brain or to the spinal marrow, in which organs he generally seeks the true origin of all sympathetic motions. We have already had occasion to refer to the experiments of Legallois, who has concluded, from his observations on decapitated animals, that the principle of sensation and motion in the trunk and extremities has its seat in the spinal marrow, and that the life of every individual part of the trunk in particular, depends on the part of the spinal marrow from which it receives its nerves. Burdach* also, in his work on the Structure and Life of the Brain, constantly explains many of the vital phenomena in a similar manner.

We have already alluded to the distinction of the various species of muscular motion according to Hall and Müller. To inquire into the adequacy and correctness of this distinction would lead us too far from our subject;—one circumstance however in the division we cannot help ani-

* *Karl Frederick* Burdach, von Baue und Leben des Gehirns.

madverting on. When M. Hall designates the involuntary as the third species of muscular action, and states that this depends on irritability, and requires the immediate action of a stimulus on the muscular fibres, one is at a loss whether to feel more astonished at the bad logic displayed in the division of the motions, or at the confusion of the common ideas and the abuse of the most ordinary terms in physiology. Under the head of 'involuntary motions are understood those which are not subject to the will, do not proceed from it, and are not determined by it. That these depend on irritability no physiologist will maintain, who knows that the causes producing involuntary motions are much more deeply seated in organic life, even though the term irritability be not restricted in the ordinary sense of physiologists to muscular irritability.

However unsatisfactory and indeterminate the advocates of the reflex-theory may be in their explanation and use of the term "reflexion," yet we may safely infer that, in their employment of the word, they mean to say somewhat the same thing of the nervous principle, which natural philosophers do of light: they mean by it "a throwing back of the nervous principle into the spinal marrow, without at the same time admitting a process similar to sensation in the brain and an effort excited thereby analogous to the will." By this name, in fact, a motion is to be designated which is essentially different from the voluntary motions following the actions of external stimuli. This meaning of the term may also be inferred from the assertion that the centripetal conducting of the nervous principle in the case of reflex motion is no longer a sensation.

With respect to what goes on in the spinal marrow in the case of reflexion, the physiologists who support the theory seem to have no very clear ideas. Thus Müller asserts that the spinal marrow in the case of reflexion does not possess sensation; he says, in another place, in accordance with this, that the seat of the sensations is neither in the nerves, nor in the spinal marrow, but that these arise through the action of the fibres of the nerves and spinal marrow on the common sensorium. He entirely contradicts himself however when, in characterising the spinal marrow to be a reflector, he understands thereby the property whereby motions follow a sensation without both kinds of nerves communicating by their primary fibres.

We now come to consider *Sensation and its Seat, as also its Relation to Reflex Motion.*

M. Hall considers sensation without consciousness a contradiction. This we know to have been the opinion of old Protagoras, who considered sensation and knowledge almost one and the same thing. This opinion was clearly refuted by Plato, who not only designates the organs of the senses as the means whereby we get sensations, but well adds, that it is only the sensations suitable and belonging to it that we can obtain by each one of those senses, and that by no one of them can we attain that sensation, to which another of these senses is set apart. This fact would suffice to refute many of the views connected with the reflex-theory regarding sensation. We shall now examine more closely the different statements on the subject separately.

M. Hall assumes that the brain is the seat of the sensations; the proof

he gives of it is this, that after the removal of the head the power of sensation is destroyed. The first contradiction into which M. Hall falls, in his attempt to prove the absence of sensation after removing the head is this, that he infers this absence from the non-occurrence of motions after the action of external stimuli; whilst, however, his chief endeavour is to prove that the motions which take place in decapitated animals after external stimuli, are of a peculiar character, and not at all connected with sensation. Thus, at one time, the motions of decapitated animals following on the application of external stimuli are made to serve as a proof of the possibility of motion without sensation; whilst, at another time, the absence of these motions is brought in as a proof of the loss of the sensations. We shall now consider a few of M. Hall's experiments in relation to this point. He cut the head off a serpent: it continued to move, when it was touched, according as every following motion brought a fresh part in contact with the table. He happened to be called away, and on his return he found the serpent hanging with a third part of its body over the sharp edge of the table. He considers that a more painful situation cannot well be conceived, if we admit that the creature still possessed sensation; it must therefore be certain, according to him, that sensation ceased. Volkmann well remarks in this place how extraordinary it is that M. Hall did not interpret these results in the only way they can be interpreted, namely, that the irritability of the creature was so exhausted, that the irritants applied did not call the reflex-function into action. Another experiment of the same physiologist on this same matter is just as inconclusive. Of two eels which he decapitated, moistened with water, and placed on a table, he stuck one with several long needles. Both continued equally motionless, when they were not touched; both were equally thrown into motion on the application of any stimulus. If the least sensation remained, the eel stuck with the needles must have wounded itself. In this experiment M. Hall inferred the absence of sensation from the presence of motion, whereas, in the preceding experiment, he inferred the absence of sensation from the absence of motion. Other experiments of this same physiologist are equally deficient in proving that the sensation of a cold-blooded animal is lost with the head. Besides, M. Hall is entirely inconsistent in assuming that sensation has its seat in the brain; for he says, sensation produces two kinds of motion; the first is through the will, the second is through some passion; but some pages after he designates the proper spinal marrow as the seat of the passions and emotions.

Müller places the seat of the sensations in the brain. According to him the sensation takes place only through the action of the fibres of the nerves and spinal marrow on the sensorium commune, and the fibres act only with their cerebral extremity on the sensorium. Here however we seek in vain for proof. Both Hall and Müller wish to place the seat of sensation in the brain, because they admit of the motions which take place after removal of the head, that they go on without sensation, for which reason they do not acknowledge sensation without consciousness and will, though even here they are not entirely consistent.

The conclusion which M. Hall drew from his experiments, viz: that sensation is abolished in all parts of the body situate beneath a division of

the spinal chord, and that only excito-motory motions remain, is then only true, when the term sensation is restricted to perceptions attended with consciousness. Müller also says that we have no certain facts to show that the spinal marrow possesses sensation independently of the brain and medulla oblongata. He also maintains that after the removal of the head reflex motions take place without sensation, but censures M. Hall for admitting that, in a perfect and sound state of the body, every motion following on a true sensation is occasioned by the will, and that all excitation of sensible parts in reflected motions is without sensation. This contradiction however arose from inconstancy in the use of the term sensation.

Physiology of the Spinal Marrow in so far as it is related to the Reflex-Theory.

In order more closely to examine the Reflex-Theory, which represents a part, and indeed a very important part, of the functions of the spinal marrow, our author proposes to consider the opinions of the reflex-physiologists on the function of this part of the nervous system. These physiologists distinguish in the spinal chord two essentially different parts; the one serves for conducting the impressions from the nerves to the brain, and from the latter to the former; the other is the middle point of the so-called reflex-function.

Into the consideration of the intervertebral chord of sensitive and voluntary nerves, which go to and from the brain as their middle point, M. Hall does not enter very minutely. Müller, on the contrary, determines it to be the property of the spinal marrow to serve as a conductor of the nervous principle, or of its oscillations. According to him the spinal marrow represents, or is connected with, not only all the nerves of the trunk in general within the brain, but also the individual primary fibres of these nerves. The brain receives the impressions of all the sensitive fibres of the entire organism, becomes conscious of them, and knows the place of the sensation according to the affection of the various primary fibres and of the spinal marrow in the case of voluntary motion. He admires in this action an infinitely complicated and delicate mechanism in the arrangement of the elements. So various is this power, so very similar is the action of the brain according to this physiologist in the excitement of a certain part beneath these numberless primary fibres to the performance of a many-stringed instrument, the strings of which sound, just as the keys are touched. The mind is the performer, the primary fibres of all the nerves, which are spread out in the brain, are the strings, and the commencements of them are the keys. In another place he locates the keys of the instrument in the medulla oblongata, where they are to be acted on by the performer, the will. This view of the matter, striking as it is, and much as it may seem to bear the impress of originality, is however any thing but new, as extremely similar views are to be found in the works of the older physiologists.

Our author after disproving the claim of Müller to originality in this comparison, now proceeds to a more strict examination of the grounds on which that physiologist endeavours to establish his views regarding the structure

and function of the spinal chord, so far as it is a conductor of the nervous principle. Respecting the proposition "that the spinal marrow serves as a stem or stock of the nerves of the trunk," the proof is said to be contained in the observations made after injuring the spinal marrow, according to which paralysis affects the parts which receive their nerves from this portion of the nervous system situate below the seat of injury. But this fact strictly taken proves nothing, except that the spinal marrow supplies the medium of connexion between its nerves and the brain, without warranting us on that account in calling it the stock of the nerves of the trunk. This is a hasty and arbitrary consequence from those experiments and observations, which is not borne out by close anatomical investigation, and which, our author assures us, is completely refuted by experiments to be presently detailed.

The assertion that "the spinal marrow represents, or is connected with, not only all the nerves of the trunk in the brain, but also the individual primary fibres of the nerves of the trunk, is considered to be proved by this circumstance, that "the affection of certain parts of the spinal marrow interrupts only the cerebral influence to certain muscles of the trunk, and the injuring of certain parts of the brain is followed only by paralysis of certain parts of the trunk." Did even this assertion rest on unexceptionable facts, still it would afford no proof for the above propositions, as these might be explained just as well, or even better, in another way. But unprejudiced observation and the comparison of a greater number of cases, as given by Burdach and others, show us, that the affection of a part of the brain is no doubt frequently followed by paralysis of certain parts of the trunk, but that other and different parts may be paralysed in consequence of it, and that, on the other hand, the paralysis of a part may be the effect of changes sometimes of this, sometimes of that part of the brain. Just as little proof for the assertion in question is contained in the statement that "the unilateral cause of paralysis in the brain and spinal marrow occasions only a unilateral paralysis in the trunk." This assertion is true only with considerable exceptions. In 268 cases of paralysis in consequence of diseases on one side of the brain, 10 according to Burdach affected both sides of the body, and 258 only the one side. Among these were 15 with paralysis of the same side on which the brain was affected, and 216 with paralysis of the opposite side. In the other 27 the results were not determined. In spasmodic affections the case is different. ccording to the same physiologist the convulsions occurred in 25 cases on the side of the cerebral disease, in three cases on the opposite side. The power of sensation is injured in like manner sometimes on the opposite side, sometimes on the same side, where the affection of the brain exists. In wounds, which injure only a portion of the spinal marrow, but do not divide it, we find sensation and motion sometimes preserved in the parts lying beneath the injury in the human subject.

This also happens in the case of animals, in cold-blooded animals a piece of the spinal marrow may be cut out on the one side without the hinder extremities of such parts being entirely removed from the influence of the medulla oblongata and brain. The following experiment will serve as a proof of this: the head was cut off of a lively frog, the vertebral *column opened* in the region of the fifth vertebra, reckoned from below

and on the left side a piece of the spinal marrow was taken away about the length of the fifth vertebra, and as far as the median line. The motions occasioned by irritants continued in all the parts, but were more lively in the posterior than in the anterior extremities. The left hind-foot evinced sensibility and motion; only the motions were less determinate, and more tremulous than on the right. The two hinder extremities more especially evinced an internal sympathy: after the application of an irritant, the motions were common to both, and in perfect harmony. The community was less marked between the posterior and anterior extremities; but a difference between the right and left could not be discovered; when the left anterior extremity was irritated, slight twitchings were occasioned in the posterior extremity of the same side; but irritations of the posterior extremities did not affect the anterior in a very striking manner; their power of motion, however, was somewhat diminished. Seven minutes after applying nux vomica to the mucous membrane of the throat, tetanic rigidity set in in the anterior extremities, and the posterior were affected with twitches; but after half a minute they also became tetanic, and both with equal intensity. Tetanus was excited by irritating the left hind leg, just as by irritating any other part of the body. In general, in the rigid spasm no difference was observable from the cases in which the spinal marrow was uninjured. A similar result was obtained, when a longitudinal division of a portion of the spinal marrow was combined with the removal of a portion of it, as appears from the following experiment: the vertebral column was opened in a frog, the medulla oblongata was separated from the spinal marrow on the left side by a diagonal section, from the same part a small portion of the spinal marrow was removed, a longitudinal cut, one inch in length, was carried downwards, and thereby this part of the spinal marrow was split longitudinally in the middle. The performance of this operation occasioned some twitchings in the upper and lower extremities. Half an hour after the division, I introduced the nux vomica solution under the skin at the lower part of the back. The motions from irritation, which were quite palpable after the operation in the posterior part of the trunk, in the hind-legs and in the head, but in the fore-legs were entirely absent, increased in a striking manner ten minutes after the action of the nux vomica, and fifteen minutes after that, tetanic symptoms were established in the posterior extremities. In this case the exalted irritability as also the spasm in the right leg was manifestly stronger than in the left, still the left also was observed to be irritable, and was affected with spasms. These had the character of rigid spasm, but without being as lasting or as violent as usual. There was this peculiarity here, that the legs, more especially the right, were directed to the right, when a spasmodic attack occurred, which, however, after five minutes gradually went off. The upper extremities remained free from spasm, and from exalted irritability. When the right half of the spinal marrow was irritated in the place of the longitudinal cut, the convulsive twitches were observed only in the corresponding parts situate nearest to it; but when the place was irritated where the longitudinal incision ceased, tetanic symptoms followed in the lower extremities. Even when, on making a separation, only a small bridge remains behind, which *connects both parts of* the spinal marrow, the con-

ducting power still continues, as the following experiment shows: the lower part of the spinal marrow was laid bare in a frog, after the head had been cut off. A piece of the spinal marrow was now cut out on the right side, just over the origin of the nerves that go to the lower extremities. As the animal still moved itself with considerable force, the lower part of the spinal marrow continued in connexion with the upper part on the left side only by means of a small bridge. The solution of nux vomica was now introduced with a hair-pencil into the mucous membrane of the mouth, which was immediately followed by an effort to remove the poison with the fore-feet. Eight minutes after the application of the poison tetanus was observed in the fore limbs. If the right hind-leg was pinched, tetanus followed in the anterior part of the body, and convulsive twitches in the left hind-leg set in, but none observable in the right. Irritations of the left hind-leg were felt more intensely, they were followed also by stronger tetanic symptoms in the anterior extremities than those of the right. In reference to the conducting power of the spinal marrow, one may fairly, from these experiments, draw the conclusion that impressions affecting this organ are not conducted separately through separate fibres, but that they throw the entire spinal marrow into a peculiar state of excitation corresponding to the impression.

From the circumstance that it depends on the brain how many muscles of the trunk are moved every time, it does not necessarily follow, as Müller thinks, that the primitive fibres of the nervous trunk which go into the spinal marrow, are not bound together in the spinal marrow, but that they proceed to the brain parallel to one another, as in the trunk of a nerve.

First of all, our author contradicts the assertion that it depends on the brain how many muscles of the trunk are moved every time; for where the brain is absent, still a certain number of muscles corresponding to the occasion at the time are moved in the so-called reflex-motion. But in the normal uninjured state of the animals it does not depend on the brain, how many muscles are moved each time, at least not in the mechanical way as stated by Müller, but only so far, as that through the central organ certain motions are aimed at, which are effected through the simultaneous or successive action of a number of muscles. The will determines not the action of these or those muscles, but has reference to only this or that end, to which certain muscles must be subservient, without this reaching the consciousness of the individual so willing.

The assertion, that "if the primitive fibres of the nerves in the spinal marrow were bound together, a local sensation in the trunk would be just as little possible as an isolated contraction of separate muscles in the trunk," is just as gratuitous as it is unfounded. When Müller says that "the cause of the convulsive twitches in the brain and spinal marrow acts on separate parts in the trunk, and thus sensations are occasioned in separate parts of the trunk when certain parts of the brain and spinal marrow are injured," he probably did not consider that, in an affection of one and the same part of the brain, pains and spasms are not always occasioned in the same part of the body, and that pains, as also spasms, of a part of the body, may depend on affections sometimes of this, sometimes of that part *of the brain.* But even were pains and spasms of a part of the body

always dependent on affections of the same cerebral part, we should be warranted in inferring from thence merely the very near relation of both parts, but not in admitting Müller's view of the matter.

Having seen that the facts, and the assertions designated as such, but so unsatisfactorily proved, in support of Müller's opinion concerning the structure and function of the spinal marrow, so far as it is a conductor of the nervous principle, are not conclusive, our author proceeds to adduce some facts which he conceives to be capable of perfectly refuting these unwarranted assertions.

1. A careful anatomical examination shows no such structure of the spinal narrow, that could support these assertions: in contradiction to them it may be stated that,

A. The spinal marrow does not diminish downwards in proportion as it gives off nerves, which should be the case, if it were the union of the primary fibres of the spinal nerves.

B. The fibres of the spinal nerves cannot be traced far into the spinal marrow.

C. The fibres of the spinal marrow, which can be demonstrated only in the white substance of the same, cannot be traced up to a certain point of the central organ; so indeterminate and contradictory are Müller's statements regarding the place where the harpsichord is to be found, whose chords are to be the primitive fibres, and whose keys the mind sets into motion.

2. Lesions in the spinal marrow contradict Müller's theory:—

A. On injuring one half of the spinal marrow we do not always observe paralysis of the parts of the same side which lie below the seat of the lesion.

B. Softening of the spinal marrow does not always destroy sensation in the parts which receive their nerves from it.

3. Experiments on animals afford decisive proof that Müller's theory concerning the conducting power of the spinal marrow is erroneous.

A. Volkmann's experiments have shown that a longitudinal division of the spinal marrow does not prevent the extension of the reflex motions to all the muscles of both halves of the body, so long as any one part of the proper spinal marrow remains connected in the middle line.

B. The author has repeatedly observed the following facts in his experiments on the action of nux vomica on the spinal marrow, which he thinks peculiarly adapted to refute Müller's opinion:

a. The cutting out of a piece of the spinal marrow on the one side prevents not the conducting power of this part of the nervous system. The same power still continues with respect to impressions from without inwards, if the upper part of the spinal marrow is connected with the lower only by means of a small bridge, and even when an irritation of the medulla oblongata no longer readily communicates itself to the part of the spinal marrow lying below the section.

b. After cutting out a piece of the spinal marrow on the one side, an impression made on the sound side is more rapidly and better conducted than on the injured side; still, on the latter side also, the conducting power is quite manifest, and not very much weakened.

c. When, after cutting out the piece, nux vomica is applied, tetanus

sometimes occurs about a moment earlier on the uninjured side. The hind-legs, also are in several cases directed to this side. This, however, is by no means constant, and never of long duration.

Having now seen that no decisive proof of Müller's theory regarding the conducting of the nervous principle in the spinal marrow can be adduced; that, on the contrary, many facts, furnished by anatomy, pathology, and experimental physiology, are undoubtedly opposed to it, we have so much the less hesitation in rejecting it, says our author, as if it be admitted, the so-called reflex motions cannot be adequately explained. In this respect A. W. Volkmann well says: if a recently-decapitated lively frog be irritated with the point of a fine needle, reflex motions take place in a great number of the muscles of the body. The irritation of the needle cannot have effected more than one or two nervous threads, and if the general motions are to be accounted for according to the known laws of nervous conduction, the irritated nervous fibre must be in immediate connexion with at least one motory fibre of every muscle. Even this connexion would not yet be sufficient. Müller very correctly says, that partial irritation of a motory nerve produces only partial irritation of the muscle, to which it is distributed, and as in the reflex motions the muscles are moved not partially but totally, the irritated fibre must be in immediate connexion not only with one motory fibre of each muscle, but with several. Now, as every fibre which conducts the irritation to the spinal marrow, is capable of producing general reflex motions, there must be many millions of nervous connexions in the spinal cord, and these numberless anastomoses must give the nervous structure the form of a capillary net-work; such a structure however is not found to exist.

After examining the views which the reflex physiologists sought to establish concerning the spinal marrow as a conductor of the nervous principle, it now remains to investigate their theory with respect to the process that goes on in this part of the nervous system in the so-called reflex motions.

For the purpose of accounting for these motions M. Hall admits a true spinal system or, as he call it, an excito-motory system. This is to consist of a proper spinal marrow distinct from the chord of the intro-spinal nerves, and of the excito-motory nerves, which are different from the sensitive and voluntary nerves. In this system he admits the existence of a peculiar power, the excito-motory power.

As M. Hall himself has declined to demonstrate anatomically his excito-motory system, nay, as he even confesses his inability to do so, the author finds it unnecessary to trouble himself with showing the impossibility of the existence of such a system by the known structure of the spinal chord. He therefore contents himself with examining the experiments of M. Hall in support of his theory. From experiments in which the so-called reflex-motions occurred in decapitated animals, and in which, after irritating the spinal marrow, motions, as well of the upper as of the lower extremities, ensued, M. Hall draws the conclusion, that the nervous action, contrary to the views of Haller and others, follows other directions, besides those of the nervous twigs and nervous fibres, directions which are incident, and reflected with respect to the spinal marrow. According to this course of *the nervous power*, M. Hall considers that there exist certain nerves which

are also incident and reflecting. These experiments of his prove nothing farther, according to our author, than that the spinal marrow and medulla oblongata have a sensibility for irritants, which act immediately on the same, that these irritants are capable of throwing this into a condition which, being transferred to nerves of motion, dispose these to excite motions; further, that the irritants which affect the sensitive nerves belonging to the spinal marrow, in like manner occasion, in this central portion of the nervous system, a state which is followed by motions. These facts, and the immediate conclusion to be drawn from them, are long known to physiologists; only the consequences which M. Hall considers himself warranted in drawing are new and also unfounded. The author is of opinion that all the experiments of this physiologist, taken together, do not contain a single fact which can fairly be deemed a proof of the existence of an excito-motory nervous system, and that the admission of such a system is not supported by any other kind of physiological proofs, and that it cannot, as M. Hall confesses, be demonstrated anatomically, and therefore that we are perfectly warranted in rejecting the theory of an excito-motory system, as a system destitute of all experimental and truly rational grounds. Having thus disposed of the substance or essence of the system, our author thinks it unnecessary to treat of the consequences deduced from it; he merely proceeds to direct attention to some errors and contradictions involved in the theory.—With respect to the distinction of the nerves on the one hand into sensitive and excitory, and on the other hand, into such as serve for voluntary motion, and into reflecting, he now calls attention to some points in order to demonstrate the groundlessness and untenability of this division. When we consider the following facts, we shall feel disposed, says M. Arnold, to admit against M. Hall, that both processes, sensation and susceptibility of excitation on the one side, as well as voluntary motions and reflex-motions on the other, are effected by the same nerves:

1st. The skin, the organ from which sensations attain consciousness in so high a degree, which, as an organ of feeling, is the medium of so many sensations, is also the organ, whose irritations call forth the so-called reflex-motions, more than those of most other organs, more for instance than those of the muscles. It is accordingly here the organ through which conscious sensations are chiefly communicated, and that also through which the reflex-motions chiefly receive their excitations. The nerves, which go to the skin, are accordingly sensitive and excitory nerves.

2nd. In admitting special sensitive and excitory nerves, a general expansion of both nerves even to the most minute ramifications must be allowed to exist in the skin, every the smallest portion of which possesses sensibility and a power of excitation. For as no portion of the skin however small can be touched with the finest point of a needle, which does not excite sensation, and at the same time the so-called reflex-motions in decapitated frogs, it must be admitted, as Volkmann has well observed, that every part of the skin of the size of a needle's point contains two specifically different nervous fibres, and to every muscular fibre which is subservient to voluntary and the so-called reflex-motion, there belongs besides a cerebral fibre, also a spinal fibre.

3rd. After dividing the *posterior roots* of the nerves given to the poste-

rior extremities, the animals not only lose sensibility in these parts, so that no indications of pain are observed on sticking or pinching the same, but also on irritating them none of the so-called reflex-motions follow, nor on the application of nux vomica, does tetanus take place; whilst, after touching those parts whose sensitive nervous fibres were not divided, this state immediately took place. This our author proved by experiments. He laid bare the under part of the spinal marrow in a lively frog, and then divided the posterior roots of the nerves distributed to the hinder extremities. These extremities could now be pinched and pricked, without the animal evincing any sign of pain. He then applied from eight to ten drops of the solution of the extract of nux vomica by means of a hair-pencil to the mucous membrane of the mouth and the cavity of the throat. Six minutes after, tetanus came on; it was more decided in the anterior than posterior extremities; and in the latter a tetanic twitching set in, in accordance with the anterior limbs, which however was quickly followed by relaxation, whilst the tetanus held on in the parts provided with sensitive nerves, which difference was observed to exist in every new case The hinder extremities were insensible with the exception of the inner surface of the left thigh. Irritation applied to this part was followed by tetanic spasms, whilst the hinder.extremities could be irritated and pinched without tetanus being occasioned. The spinal marrow was now divided in the middle of the seventh vertebra, reckoned from below; in the parts anterior to the division the tetanus continued, but the hinder extremities were relaxed; only when the interior surface of the left thigh was touched, tetanic twitches were observed. He now divided the still uninjured sensitive nervous fibres on the left side, after which all sensation was lost in the posterior extremities, and no trace of a tetanic spasm could be observed. A repetition of this experiment was followed by the same result.

4. Nux vomica exalts so very much the power of sensation, and increases also the susceptibility to irritants after the removal of the head, that M. Hall numbers it among the poisons which produce an excess of reflex-function. This fact renders it so much the more probable, that sensation and susceptibility to excitation are not effected by different nerves and parts of the nervous system, more especially if the following points be kept in view.

A. After removing the head or brain the susceptibility to excitation still exists, and nux vomica also is still capable of producing exalted irritability and rigid spasm, a result very striking in amphibious animals. M. Arnold opened in a frog the cavity of the head as well as the upper part of the spinal marrow, and divided the medulla oblongata at its upper extremity, so that it was perfectly separated from the brain. After some minutes the vital phenomena were again re-established, and five minutes after the division the motions of irritation were plain to be seen. Now some extract of nux vomica with water was introduced under the skin on the lower part of the back. The consequence was that, after five minutes, tetanus set in a very severe degree. From this and other experiments attended with the same results, the conclusion may be drawn that removal of the brain does not stop the action of nux vomica on the nervous system, and *that, after complete* separation of the brain from the medulla oblongata,

the action of this poison shows itself in parts which are connected with the medulla oblongata and spinal marrow, and under its influence. Accordingly these parts of the spinal marrow are capable of being thrown into a peculiar state and condition by an irritant, which possesses a specific local action on them, independently of the brain, just as after the removal of the head they produce self-dependent and determinate motions after the action of stimuli.

B. After injuring or partially removing the medulla oblongata the so-called reflex-motions are weaker and of less duration, than after mere decapitation of the animals. The same thing occurs with respect to the action of nux vomica. Our author's experiments on frogs gave in general the following results in this respect.

a. Removal of one lateral half of the medulla oblongata does not suspend susceptibility to the action of nux vomica, if the process be carefully conducted. The action is merely of less duration.

b. Cutting off a small portion at the upper extremity of the medulla oblongata does not prevent the occurrence of the exalted irritability of the skin and of the tetanic spasms; it merely seems to delay their occurrence, and to be the cause of these phenomena, being less permanent in the experiments in question, and also of their being less marked in the hinder extremities.

c. After the division of the medulla oblongata transversely, the tetanic spasms either do not come on at all, or but very slightly and feebly.

C. After removing the medulla oblongata, the reflex motions diminish more palpably in energy and duration than after their mere lesion. This is also the case with tetanus occasioned by the application of nux vomica before cutting out the medulla oblongata.

D. The medulla oblongata through which the sensations, at least of very many parts of the body, are effected, is the great point of the nervous action of nux vomica, which increases the power of sensation in so high a degree, and also, as the reflex physiologists themselves admit, increases the susceptibility to excitation. After opening the upper part of the spinal canal in a sprightly frog, M. Arnold made, with a sharp knife, a transverse cut immediately behind the lesser brain, and a second one immediately above the origin of the nerves going to the anterior extremities. The portion of spinal marrow lying between the two cuts with the medulla oblongata was taken out and removed from the canal. In the head and in the anterior extremities all the motions of irritation were instantaneously abolished; on the contrary, they were tolerably active in the posterior limbs, and were also excited by touching the posterior part of the trunk; the hind-legs were strongly drawn up, and could not be extended without some trouble. The nux vomica was applied rather plentifully, about a grain and a half of the extract mixed with water, partly beneath the skin on the back, and partly on the outer skin. Fifteen minutes later no tetanic spasms had as yet appeared, but the motions of irritation began to decrease. After seventeen minutes the motions of irritation were only very weak, but no convulsive twitches could be perceived. In general such effects did not follow.

From these experiments, as well as from the circumstance that the tetanus occasioned by the application of the nux vomica still continues if

the medulla oblongata is not removed till after the action has set in, the following conclusion may be drawn: that the spinal marrow is not active from its own intrinsic powers, and that it re-acts only so far as it is charged from the medulla oblongata, and according to the manner in which this charging has taken place. One might then consider the so-called reflex-motions still continuing after the removal of the medulla oblongata, as charges of the nervous fluid accumulated from the spinal marrow previously transferred from the medulla oblongata. This view however is but partially correct; for, besides the structure of the spinal marrow and so many physiological grounds, it is opposed by the circumstance, that certain agents still act on it after the medulla oblongata has been removed; strychnine, for instance, is still capable of exciting rigid spasms under favourable circumstances.

Müller does not express himself very definitively, regarding what takes place in the spinal marrow in the reflex-motion. According to his view an irritation of a sensorial spinal nerve next causes a centripetal action of the nervous principle to the spinal marrow. If this can reach the *sensorium commune*, a conscious sensation is produced. But, if it does not reach the *sensorium commune* in consequence of a division of the spinal marrow, it still retains its entire power as a centripetal action of a sensorial nerve to produce a reflex-motion. In the first case the centripetal action would be at the same time a sensation, in the latter case not, but it is sufficient for the reflex-motion or for the centrifugal reflexion. But we are not here told in what way the centripetal action, which does not reach to a conscious sensation, brings about a centrifugal reflexion, and wherein the process effecting this in the spinal marrow differs from that in the brain in the motions attended by conscious sensations. From more than one passage in Müller it appears that he assumes in the spinal marrow a mechanical transference of the nervous fluid from the nerves of sensation to those of motion. This assumption however is contradicted, not only by all the facts above adduced to disprove the isolated conducting property of the nervous fibres in the spinal chord, but also by the experiments which show that the motions of irritation of decapitated animals evince the character of determinateness and harmonious accordance.

We shall now close our notice of this work by presenting an analysis of the last chapter, entitled "Facts which the Observation of Nature presents regarding the so-called Reflex-Motions, and Consequences therefrom."

Close observation presents, regarding the so-called reflex-motions in decapitated animals, the following facts:

1. If the convulsive movements which frequently follow decapitation are over, or if the animal has recovered from the paralytic state, which sometimes sets in after it, it generally performs motions only on the application of external stimuli. In decapitated frogs no doubt self-dependent motions are sometimes observed to follow: they occur, however, when the frogs are placed in unusual positions, and consist in their endeavouring to attain their ordinary position, or one more convenient. Such movements however are only apparently self-dependent; they are essentially occasioned from without.

2. The motions in decapitated animals, occasioned by external irritants,

bear the character of suitableness, and when combined, they indicate internal connexion and harmony. The end generally shows itself in the motions, such end being to remove the external irritant which gives rise to them, and frequently considerable exertion is made for the attainment of this end. If, for instance, a decapitated frog be laid hold of in the back with a pincers, he springs with one of the hind-legs at the place and seizes the pincers. Oftentimes the wish to withdraw itself from the irritant, is the palpable cause of the motions. The animal extends the irritated limb, the frog jumps from it, if the irritant be severe.

3. The so-called reflex-motions are more lively in decapitated than in undecapitated amphibia.

Whilst in undecapitated frogs it happens frequently that no motions take place after external irritants, when, for instance, the animals observe that they cannot instanter withdraw themselves from the irritant; determinate and suitable motions in general follow after cutting off the head or removing the brain in consequence of the action of an irritant on the skin, as soon as the animal has become tranquil and its irritability is again re-established.

4. The briskness of the motions is increased by those influences which suspend or oppress the activity of the brain. If opium be given to an undecapitated frog, our author has found that, in addition to the state of stupor, infringement on the will and on the free selection of its movements, there is observed an exalted sensibility to external irritants in the skin, and hence a greater liveliness in the so-called reflex motions; there follow even tetanic symptoms, just as after the action of nux vomica. In decapitated amphibia, or in those where brain has been removed, opium no longer increases the irritability of the skin in equally strong doses, nor the motions consequent on irritations.

5. These influences which possess a specific stimulating effect on the medulla oblongata and spinal marrow, exalt the sensibility in uninjured animals, and just in the same way heighten in decapitated animals the susceptibility to irritants, especially in the skin, and the motions resulting from irritation or the so-called reflex-motions.

6. The motions which take place in decapitated animals, depend for their character chiefly on the state of the spinal marrow induced before the decapitation, by the brain or medulla oblongata. In some degree, also, the state of the spinal marrow after the removal of the brain and medulla oblongata may be further determined by the strength and peculiarity of the external irritant, and thereby the peculiarity, strength, sprightliness, and duration of the motions may be modified. Of some animals, as birds, for instance the ostrich, it is long known that they will run after their object, even though their head be cut off while running. Whilst nux vomica, as the extract with water, does not heighten the irritability of the skin and the sprightliness of the motions after the action of irritants, and likewise occasion no tetanic spasms, if the medulla oblongata has been previously separated from the spinal marrow; so, on the contrary, the exalted irritability and sprightliness of the motions, as well as the tetanic spasms continue, if the medulla oblongata be cut out, after the

effects of the nux vomica have already commenced. The circumstance that strychnine may produce tetanus even after the removal of the medulla oblongata, is an argument in favour of the self-dependence of the spinal chord.

7. The so-called reflex-motions do not cease to be general, though the spinal marrow on the one side be cut through even to the middle, or though a piece of it be cut out in the one-half. In like manner a longitudinal division of the spinal marrow prevents not the extension of these motions over all the muscles of both halves of the body, so long as one part of the spinal marrow remains connected at the median line.

8. Cutting through the posterior roots of the spinal marrow stops the so-called reflex-motions. If this division be made at the posterior extremities, and then the spinal marrow be cut transversely in the middle, the posterior extremities are perfectly motionless, which is not the case if the nerves of sensation continue uninjured.

9. On the degree of susceptibility to irritation and on the strength of the irritant depends the strength and extension of the motions from irritation, or of the so-called reflex-motions, with which also the facts 5 and 8 agree. But when the susceptibility to irritants is considerably increased, the motions lose the character of suitableness, and take on that of spasm.

10. The so-called reflex-motions take place chiefly after irritations of the skin, conjunctiva, mucous membrane of the nose, mouth and throat. Irritations of the thoracic or abdominal viscera produce no determinate, suitable movements. Even after irritations of the muscles and nerves only spasmodic twitches take place, without any character of suitableness or harmonious accordance.

We are now perfectly warranted in drawing from these facts the following conclusions:—

1. A power to feel external irritants has its seat in the spinal marrow, in some degree independently of the brain and medulla oblongata, *the perceptive faculty of the spinal marrow.*

2. This power in the spinal marrow, regards not merely the irritant in general, but also the kind, the degree, and the locality of it. But the property of perceptions connected with consciousness is wanting.

3. Next to the perceptive faculty (the faculty of feeling) is the faculty of the spinal marrow to re-act correspondingly to excitements occasioned by impressions, and in consequence of this to perform suitable, combined and harmonious motions, *the re-active faculty of the spinal marrow.*

4. These motions are no doubt suitable and harmonious. Still they want the character of freedom. They are not external manifestations of a will.

5. The spinal marrow possesses only in a slight degree the faculty of accomplishing spontaneous motions. If in decapitated animals self-dependent motions follow, they are principally the consequence of a disposition or excitation which the spinal marrow has received from the brain or medulla oblongata previous to the decapitation.

6. The degree of the perceptive faculty of the spinal marrow depends on a peculiar disposition of this organ, which is effected in it principally

by the medulla oblongata, and which, without it, can be produced in this organ only in a very slight degree. The same may be said of the rapidity and violence of the motions occasioned by external irritants.

7. The disposition produced in the spinal marrow in this way continues for some time in it, if it be separated from the brain and medulla oblongata, and even in separate parts of the same.

8. That which takes place in the spinal marrow during the perception of external influences, and the determination of motions following thereon, is analagous to that which takes place in the brain during conscious sensations and voluntary motions, only that clear consciousness and freedom of the will are wanting to it, whilst the character of suitableness and of harmonious accordance appertains to it in the highest degree.

We cannot help remarking here, that this account of what takes place in the spinal marrow during its perception of external influences is very unsatisfactory, perhaps, however, necessarily and unavoidably so; to attempt to explain and illustrate one thing by comparing it to something else which is equally in want of illustration, leaves us in our former condition of ignorance.

9. The impressions which the central organs receive through the nerves, produce in them a condition or disposition corresponding to their quality, depending both on the nature of the impression and on the nerve by which it is taken up and conducted to the central organs of the nervous system, whereupon these organs re-act in a corresponding manner.

10. A mere transference of the nervous principle from sensitive to motory fibres does not take place in the spinal marrow. The term "reflex-function" does not indicate what takes place in this organ during the motions occasioned by external irritants.

11. With regard to the conducting faculty of the spinal marrow, observation goes to show, that it is in its total character, in its character as a *whole*, that it imparts the condition, in which it is placed on the one hand by the brain and the medulla oblongata, and on the other hand by the nerves. After what has been already said it can no longer be admitted that the fibres of the spinal marrow conduct impressions separately and isolatedly, just like the nervous fibres.

12. It is not the number of the muscles moved that the central organ determines, but the end which is to be attained. A harpsichord-theory, as it has been introduced of late years, has no facts for and many against it.

We shall here conclude our analysis of this very interesting, and at the same time, very caustic critique of Dr. Arnold. Its perusal has more than ever convinced us that the many squabbles in science and literature, and the great multiplicity of controversies and disputes which distract the learned world, are owing less to differences of opinion regarding things, than to the abuse of words.

Much has been said to prove the antiquity of the theory of the reflex-function, and thereby to deny M. Hall's claim to the merit of originality, as its discoverer. In justice, however, we are bound to say, that even though this distinguished physiologist may not succeed in establishing his claim to absolute priority of discovery, he has the unquestionable merit of having evoked it from *the tomb where it had* so long slumbered, of having

invested it with what it never before possessed, a determinate form and an appreciable character, and of having realised that which should be the ultimate end and aim of all physiological researches, namely, the having rendered it practically available in the diagnosis and treatment of disease.

CLINIQUE CHIRURGICALE DE L'HÔPITAL DE LA PITIÉ. Par *J. Lisfranc*. Tome premier. Paris, 1841, pp. 694.

The Clinical Surgery of the Hospital of La Pitié. By *J. Lisfranc*.

WE feel great pleasure in introducing to the notice of our readers another practical work, proceeding from the French medical press. It is one of an important character, being the first of a series of volumes descriptive of the practice of the greatest of living French surgeons. It is true that various portions of M. Lisfranc's doctrines and practice have been from time to time published by himself or his pupils in the French medical journals, with no niggardly hand, and have been transferred thence to our own pages; but we have them here in a more conveniently accessible form, increased by many additions, derived from the author's extensive practice, fully authenticated by his own publication of them, and benefited by his revision. It is to be lamented that every hospital physician and surgeon does not feel it incumbent upon him to present the world with a detail of the practical results his career has enabled him to arrive at; and, indeed, one can hardly acquit one enjoying the vast opportunities that hospitals afford, of neglect of duty, who omits calling, through the medium of the press, his brethren to the participation of the benefits thence derivable.

The size of the volume before us, our limited space, and the importance of presenting to our readers as distinctly as possible the opinions of so great an authority as M. Lisfranc, will prevent our indulging in any observations in the course of this review—confining ourselves to the more laborious, but also more useful, task of presenting to the reader an accurate abstract of the author's views, delivered as nearly as possible in his own words.

No system is observed in the arrangement of the various subjects treated of, and we cannot do better than follow the order in which we find them set down.

I. REMARKS ON THE UVULA.

The uvula may offer a great variety of appearances, without any corresponding change of the voice. Thus the author has seen it as a short thick tubercle, or entirely absent, while, in other cases, it has been half as *long again as its* normal length. It may also be bifid, with or without the

same condition of the palatine arch. When it is very thin, or a mere tubercle, dissection proves it to consist only of mucous membrane, and a great number of follicles, while its bifid condition, and the absence of the levator uvulæ, constantly produces a procidence, for the relief of which all medical applications are useless.

Besides the levator uvulæ, covered with mucous membrane, the uvula consists of cellular tissue, thickly studded with small glands, resembling in texture those of the tonsils. Its free extremity does not consist of muscular fibres, but three mucous follicles, susceptible of very great developement, may be often found there. The observation of many cases, in which the uvula has been removed, prove that it is not concerned in the formation of the voice, or in the articulation of sound. Lisfranc believes, with Richerand, that it indicates to the pharynx the arrival of the alimentary bolus, the passage of which it facilitates by the quantity of mucous it supplies. Another function may also be assigned to this organ. When we desire to clear into the pharynx the secretions of the nasal cavities, we close the mouth, and introduce into them as large a quantity of air as possible. At the same time the velum palati is borne upwards and forwards, and the uvula, following this movement, and being situated, like the larynx, upon the median line, it forms a protecting barrier to this important part, forcing to the right or left, bodies which would otherwise have fallen into the glottis. He mentions three proofs of the truth of the above statement. First, by any one making forcible inspirations before a mirror may observe the movement described: secondly, that the rudimentary condition of the uvula is most remarkable in animals whose heads incline to the ground, and least so in those whose organization approaches the human, as in the red ourang outang, which possesses an almost perfect uvula: thirdly, when the uvula is in a condition of complete procidence, or when it has been entirely removed, unless inspiration be conducted slowly and carefully, the nasal mucous passes into the glottis.

Procidence of the Uvula.—The influence of the procidence of the uvula in exciting other affections is too often overlooked. It may produce, maintain, or aggravate inflammatory affections of the throat, of the lungs, and of the larynx; so, also, its excision is sometimes the only mode of combatting certain cases of chronic gastritis. When the procidence arises from acute inflammation in its early stage, or from chronic inflammatory action, local bleeding, pediluvia, astringent gargles, or the application of nitrate of silver, are the means to be adopted. But when active inflammation, occurring in a robust person, is present, a general bleeding should precede these. When the inflammation has become truly chronic, or the organ engorged with serum, or paralysed, small applications of pepper, ginger, or caustic may be had recourse to. When the affection resists all means, and especially if it puts on a scirrhous character, the removal of the entire organ can alone suffice, for if a part be merely removed the malady is frequently reproduced. The author considers a very needless multiplication of scissors for this operation has been made. Their points should be blunt and their blades curved. Although, in some cases, when paralysis of the part exists, the patient does not suffer pain during the operation, in other cases he *does so most grievously*. After the removal of the

uvula we must carefully treat the persisting chronic inflammation of the throat, or a continued hoarseness of the voice may remain.

II. ON THE APPLICATION OF LEECHES TO VARIOUS PARTS.

The thickness of the epidermis of the palms of the hands and soles of the feet usually prevents leeches biting in these situations.

The cicatrices often continue very visible, and therefore we must abstain as far as possible from placing the leeches upon parts habitually exposed: and, when this is unavoidable, we must employ very small ones.

In women and children, in whom the skin is very delicate, we must avoid the course of large veins, otherwise hæmorrhage, difficult to arrest, may be produced.

Leeches applied to the face frequently produce œdema and erysipelas.

Applied at the angle of the eyelids they will frequently produce œdematous erysipelas, an ecchymosed condition of the eyelid, and an aggravation of the acute ophthalmia. They should be placed on the temple, along the roots of the hair, and, if necessary, behind the ears, where they will be just as useful. In meningeal affections their application to the mastoid processes is attended with great advantage.

The practice of placing leeches upon the inner surface of the eyelid is bad: in acute inflammation the site is too limited to admit of sufficient blood being abstracted hence, and, even in chronic affections, Lisfranc has often seen the practice give rise to serious aggravation of the inflammatory action.

When leeches are applied to the neck for inflammatory affections of the throat, they give rise to unseemly scars in women. They are equally useful applied upon or behind the mastoid processes, or along the roots of the hair. Moreover, in women, whose skins are very delicate, or in young children, the leech may open one of the superficial veins of the neck, and thus give rise to phlebitis—the more dangerous from the vicinity of these vessels to the heart—or, in other cases, a severe hæmorrhage may call for the use of caustic. The advantage of easy compression behind the ears is obvious.

When leeches are applied to the epigastrium some of them are often placed over the cartilages of the ribs; but the mobility of these parts during respiration often causes a large loss of blood, especially in young children. Lisfranc has seen a life lost through the commission of this error.

When leeches are applied to parts possessed of much *embonpoint*, little blood will be procured. Thus, if you attack a peritonitis in a very stout person with forty leeches, you will but aggravate the disease, by adding to the congested state of the peritoneum. You must double the number, and very often precede their application by a general bleeding.

Avoid the situation of the chief subcutaneous nerves, as the bites will cause excessive pain. Thus, *e. g.* in the fore-arm you must prefer the dorsal to the palmar aspect.

When leeches are applied to the mucous membrane of the vulva, their bites are very painful, and difficult to heal—while, when applied around *the region, the* same inconveniences do not arise.

Do not place them too near the rectum, for the bites, bathed in matters which proceed from its cavity, degenerate easily into obstinate ulcers.

The application of leeches to the scrotum, prepuse, or skin of the penis is attended with excessive suffering, and has been occasionally followed by gangrene. They should be applied along the course of the spermatic cord, where they succeed equally well.

As numerous nervous filaments are met with on the dorsal aspect of the hand, and on the instep, leeches should not be placed there—but rather upon the posterior and inferior portion of the fore-arm, and the superior and external portion of the leg—the practice of La Pitié showing that they are just as useful in these situations.

Do not apply leeches to the inferior parts of the leg, for, even when the part is sound, and much more so when there are varicose veins, the bites may produce very obstinate ulcers.

When leeches are placed *upon* the breasts, they cause great pain, disagreeable scars, and frequently erysipelas—while they are equally useful when applied *around* these organs.

Although it is generally admitted that leeches should be applied upon inflamed parts, yet, in erysipelas complicated with phlyctenæ, and in phlegmon presenting a deep red colour at its centre, if this rule be followed, gangrene will often follow—to say nothing of the severe pain, arising from the exalted sensibility of the parts. Place the leeches around the margin of the inflamed zone.

Gangrene may also be excited by applying leeches to œdematous or ecchymosed parts, and to colourless swellings, in which the skin is indurated or adherent.

Do not apply them to a syphilitic bubo, but at a distance of three or four inches from its base—otherwise, you will sometimes find the little wounds converted into venereal sores.

Leeches must not be placed upon a fractured limb, as the subsequent pressure of the splints may retard the cicatrization, and induce inflammation or ecchymosis.

When you are in doubt concerning the scirrhous nature of a tumour, do not apply leeches *upon* it—for you may find the bites converted into cancerous sores, and the progress of the affection untowardly hastened.

The difficulty there exists in establishing the diagnosis of the *engorgements* of the neck of the uterus, should lead us to proscribe their application to that part.

III. General Observations on Bleeding.

Experience has shown that *general* is more efficacious in inflammatory affections of the parenchymatous textures—these being more especially under the influence of the larger vessels; while *local* bleeding is best adapted for inflammation of the membranous tissues—influenced as these are by the capillary circulation.

The loss of blood is supported with less ease in the state of health, than when inflammatory action is present; and so much is this the case that, as the patient approaches *convalescence*, or the affection becomes chronic,

he is found to be less and less able to bear depletion. Inhabitants of warm climates support the loss less easily than those of temperate ones. Idiosyncracies are sometimes very remarkable as regards blood-letting: sometimes, in apparently feeble persons, abundant losses of blood are tolerated with great facility, while even a few leeches will, in some apparently robust persons, at other times produce complete anœmia. Again, in other persons of an ordinary appearance, bleeding to a frightful extent is followed by no ill effects. Women possess extraordinary reparative powers under such circumstances.

When an acute supervenes upon a chronic inflammation, and former evacuations have depressed the pulse, and weakened the patient, we must not bleed again, though the disease still continue, lest we diminish too far the resources of Nature. In the case of old persons we must not fear abstracting blood, due attention being had to their age and constitution, when we find a well-developed inflammation, seated in healthy organs, and manifesting sthenic symptoms: but, when the attack is grafted upon a chronic inflammation, affects a diseased organ, or is attended by asthenic symptoms, bleeding will be fatal, or at least dangerous. In traumatic inflammations, especially if these do not implicate the abdominal viscera, bleeding must be insisted upon; if prompt, the inflammation will soon yield, and the subsequent suppuration and other ill-effects be prevented, or much lessened—for injuries are found to resist the effects of bleeding with less pertinacity, in proportion as it is early applied to them. Although gangrenous inflammation forbids all venesection, yet supposing that in a robust individual the death of the tissues concerned has arisen from an excess of inflammation, which still continues, and menaces other parts not yet attacked, the gangrene may be limited in extent, and the inflammation diminished in intensity by the use of leeches.

It is in inflammations of the *lungs* and *pleura*, that extensive depletion is best borne, at least, providing no considerable extent of pulmonary tubercle exists. What are we to think of those statistical physicians, who, reasoning from an insufficient number of facts, tell us that these affections should be cured without the abstraction of blood? In repeating venesection for affections of the *head*, we must be careful lest we destroy the equilibrium of the nervous and vascular systems—the former being susceptible of excessive excitement when bleeding is carried too far. Inflammatory affections of the *abdomen* are usually speedily attended with great prostration of strength—arising, the author conjectures, from the effects of the mephitic gases produced by a suspended digestion. These pass from the canal by imbibition, and excite a poisonous effect upon the system, one result of which is observed in the fetid and black condition of the stools occurring in these cases. In such cases, depletion requires some caution.

When *revulsion* or *derivation* is intended to be produced by bleeding, it must not be too abundant. From four to six leeches, but especially a venesection from three to six ounces will suffice. M. Lisfranc lays great stress upon the benefit of derivative bleeding, and blames those surgeons, who, only removing blood when febrile action or a full pulse exist, neglect the fact, that while the loss of three ounces of blood will produce no debility, it yet may be attended with the happiest effects.

When it is desired to produce the menstrual flux, leeches are applied around the vulva, or upon the thighs. When, on the contrary, menorrhagia, active or passive, exists, although the woman be very feeble, it is found that one or more derivative bleedings will relieve her—provided, at least, that the womb be not organically diseased. A few leeches will often create an erysipelas, when a greater number will not do so—so, also, a few will exasperate an intense inflammation, which many would relieve. For the purposes of derivation, M. Lisfranc prefers leeches to cupping.

The author has treated, by small revulsive bleedings from the arm, chronic lesions of the uterus, attended with pain, forcing, and an inconvenient sense of heat. These bleedings have generally caused pain of the head, difficulty of respiration, palpitations, &c., but the affections of the womb, for which they were instituted, have almost always been relieved. In women, who are habitually liable to a congested state of the uterus, two or three small bleedings, practised during the intervals of the menses, are often attended with great advantage. In some very rare cases, however, the uterus becomes more congested, and the symptoms aggravated, but such cases are very exceptional, and are usually very difficult of cure by any means. White-swellings, when not in a state of acute inflammation, have frequently been much benefited by the increased absorption the application of a few leeches around the base has induced. As derivative bleeding causes congestion of the parts in the vicinity of which it is performed, it must not be practised at the arm, chest, mastoid process, &c., when thoracic or cerebral congestions are to be feared. This mode of bleeding has fallen into discredit with some, owing to the erroneous manner in which they have practised it—namely, by abstracting large quantities of blood, and thus producing an injurious effect upon the nervous system.

IV. THE APPLICATION OF THE STETHOSCOPE IN SURGERY.

In Fractures.—M. Lisfranc considers this instrument of the highest utility in the diagnosis of obscure fractures; and that, with its aid, there can scarcely ever remain the slightest doubt whether a bone be broken or not. The swelling so often present, does not conceal the crepitus from the stethoscope, and the slightest movement indicates the exact site of the fracture—so that, not only are patients assured against the ill-consequences of a faulty diagnosis, but they are spared the painful proceedings so often otherwise necessary to form one at all.

"*General Rules for the Application of the Stethoscope.*

"When the stethoscope is applied to the fractured part itself, it is almost a matter of indifference whether the plug be retained or not; but when we apply it at a point distant from the seat of fracture, the crepitus will become more distinct if the plug be previously removed.

2. The more superficial the bones concerned, the louder the crepitus, which will then be produced by almost imperceptible movements—and, as it is always most distinct just over the fractured part, the exact site of this latter is ascertained.

"3. Although the crepitus is heard with less distinctness in proportion to the

distance, yet, only those who have tried the experiment, can imagine at what inconceivable distances it may be sometimes perceived.

"4. When there is a riding of the extremities of the bones the crepitus is much less distinct; but, if an experienced ear cannot distinguish it with sufficient distinctness, it may easily be rendered more apparent after slight extension and counter-extension have been practised.

"5. The fragments of the compact bones furnish sharp, grating, crackling sounds, which, heard through the stethoscope, distress the ear by their loudness.

"6. The crepitus, resulting from the fractured spongy bones, produces a duller sound: it resembles the action of a file upon pumice-stone, but it is interrupted at intervals by louder sounds, somewhat resembling those proceeding from fractures of the compact bones.

"7. Oblique produce a stronger crepitus than transverse fractures.

"8. If fluids be effused around the fragments, the crepitus is accompanied by a noise resembling that produced by the foot in a bad shoe that has let in water.

"9. When the fracture is attended with splinters, besides the ordinary crepitus, there may be heard a sort of crackling, as if produced by several hard, angular bodies rubbing against each other.

"10. When there is also a wound of the soft parts, the crepitus is accompanied by sounds resembling those produced by making forcible expirations and inspirations, the mouth being kept wide open the while.

"11. Luxations cannot be confounded with fractures, for the noise produced by the displaced articular surfaces is slight, very limited in extent, and of a duller character—that, in fact, of two moistened and polished surfaces playing upon each other.

"12. The sliding of the tendons in their sheaths produce full, dull, interrupted and infrequent sounds, very unlike those resulting from a fractured bone." 54-56.

Special Rules for the detection of each fracture are furnished by the author, but they are too long for our purpose. We will only observe that they serve to show how immensely the diagnosis of fractures in the neighbourhood of joints, &c. has gained by the stethoscope, and that M. Lisfranc impresses upon his readers the great importance of educating the ear by frequent experiments upon the dead.

In Urinary Calculi.—"To obtain the most distinct sensations, we place the stethoscope, having removed the plug, upon the body of the pubis, or upon the posterior part of the sacrum. If the sound be introduced into the bladder, void of urine, and containing no calculus, the motions imparted to the instrument produce a noise like that of a pump in action. When there is a little urine in the bladder, a sound like that made by working the saliva in the mouth is sometimes produced: but, if a stone exists, a very distinct tinkling is heard, or else sounds resembling those resulting from filing a compact or a porous body. When, as an experiment, some soft tissues have been introduced into the bladder, sounds similar to those heard in the empty bladder, or when it contains only a little urine, were perceived." 77.

Biliary Calculi and other Affections.—M. Lisfranc has long thought that the stethoscope might be useful in detecting biliary calculi, and has tried many fruitless experiments in these cases. In one alone could he detect a crepitus. He considers the instrument of utility in detecting

foreign bodies, when sonorous, lodged in the ear, nares, pharynx, œsophagus, rectum, vagina, womb, sinuses, the track of a wound, &c. &c.—as also in ascertaining the existence of sequestra in necrosis.

V. Observations on Fractures and their Treatment.

Excepting when the attendant inflammation is excessively severe, surgeons are accustomed at once to apply the apparatus to fractured limbs—a practise of which M. Lisfranc disapproves, not because he agrees with Troja that this early compression retards the deposition of the provisionary callus, but because it may easily produce sphacelus. In the very simplest cases of fracture he applies the splints at once, but removes them, for examination, on the next day at very latest—always bearing in mind the ease with which gangrene may be produced in some subjects, and this not only in the aged, but also in some young persons of apparently robust health.

When however the fracture is of a rather more complicated nature, no apparatus is to be applied until the fourth, fifth, or even the sixth day—and the author appeals to the success he has met with at La Pitié during fifteen years, as a proof that this is sound practice. If, however, the patient becomes delirious, and it is found impossible to manage the limb by strips of bandages, the splints must be had recourse to, upon the principle of choosing the least of two evils. But in cases of bad fracture, besides this late application of the apparatus, he adopts other means.

"I order a bleeding from the arm, to a greater or less extent, according to the constitution of the patient; and the limb is covered with an emollient cataplasm; renewed four or five times a day. The most rigid diet is enjoined, and the extremity is maintained in a convenient position by several napkins folded lengthwise. If the pulse is good, the countenance not pale, and the system undepressed, a second bleeding of rather less extent is practised eight or ten hours after the first. Next day, if the state of the circulation permits, I again bleed though to a still less extent; and, in fact, for three, four, or five days, when no wound exists, and the patient is not too much enfeebled, I continue to draw small quantities—from three to six ounces. I choose in these latter bleedings a point as far removed as possible from the seat of inflammation—adding, thus, to the benefits of depletion those of revulsion. As already observed, in traumatic inflammation, depletion is far better borne than in other forms. Venesection is preferable to leeches. We have to combat inflammatory action, and a more or less considerable effusion of blood. According to the experiments of Magendie, not only will the general bleeding relieve the phlegmasia, but, also, by suddenly diminishing the quantity of blood contained in the veins, it will render them more eager for liquids, and the absorption of effused fluid will become more rapid, than it would be if you applied leeches, which act only upon the capillary system. If you do not admit the correctness of this reasoning, at all events do not apply them to the fractured limb itself—for we have often observed, in patients brought into the hospital, the bites, subjected to the pressure of the splints, converted into ulcerations, which, increasing in size, have frequently offered much obstruction to the subsequent use of the apparatus necessary for the consolidation of the fracture. When, however, the fracture is complicated with wounds of the soft parts, you must be on your guard—for it is essentially necessary to discontinue the evacuation of blood when the secretion of pus is about to commence; and the neglect of this fundamental therapeutical principle has cost

many patients their lives. Can it be necessary to state, that if you abstract blood, during the secretion of pus from a recent solution of continuity, you risk much the production of a resorption of the latter fluid—the frequently fatal results of which are well known. Even a very low diet must not be continued when the secretion of pus has commenced, unless the deranged condition of the alimentary canal prevents the administration of all descriptions of food. Irritation or inflammation of the stomach may be induced by hunger itself; and the patient, if fever be not present, would be living as it were upon his own system, the function of absorption rendered more active, and the resorption of pus more probable." 86.

To the observance of the above precepts the author attributes the great success that has attended his practice, and the fact of his having been able to preserve limbs from amputation in so many cases of bad injuries to joints, &c. It is erroneous to suppose that the delay recommended causes the patient more suffering; nor is the cure retarded, for callus is not deposited during the existence of the effused blood or inflammatory action.

During the first, or even second week, the apparatus must be removed every or every other day, by which means alone are we able to counteract any vicious consolidation. It is to be remembered, that, at first, the muscles, much irritated by the violence to which they have been subjected, resist all our adjusting processes, and it is not until such irritation has diminished that you can attain your ends. And, although the callus becomes more and more solid from day to day, it will yet yield to means perseveringly adopted to prevent deformity—so that we must not think a displacement, against which we have struggled in vain for several days, as necessarily invincible.

As to the removal of *splintered portions of bone*; when they are not very large, and maintain adhesions with the soft parts, we should not remove them—for Ambrose Paré has shown, and subsequent experience has frequently proved, that they may continue to live, and become rejoined to the bone whence they had been entirely separated. In the case of an old woman, who died from other causes, a large portion of the tibia, two and a half inches long, which had become detached, was found living, and completely re-united to the remainder of the bone. When the splinters are detached from the soft parts, we may endeavour to extract them, to effect which we may have to make some incisions; but if these are likely to be required either very deep or very long, we must renounce the attempt, as risking serious accidents. When these splinters have been left to themselves, they are sometimes found, in subsequent autopsies, to have become encysted, and at other times to be more or less surrounded by a deformed callus; in some cases they penetrate among the soft parts to great distances from the seat of fracture, and in others they become absorbed. The author is acquainted with a great number of the old officers of the army, who suffer from time to time considerable inconveniences from the irritation and inflammation these splinters keep up. He prefers treating such cases in a temporizing manner by rest and antiphlogistics, to employing the large incisions sometimes recommended.

When the splints have been removed, and the fracture become consolidated, you must still see your patient frequently, at least for the first two weeks after—otherwise you may find a serious deformity afterwards

appearing—a deformity, however, in the great majority of cases, susceptible of relief, although it may have existed several weeks.

The effusion of blood sometimes resists general bleeding, ordinarily so efficacious in removing it. In such cases Lisfranc has employed *diuretics*, upon the same principle he would use them in dropsy, with the best effect. So, too, purgatives are here highly useful, when the strength of the patient, and the condition of the alimentary canal admit of their exhibition.

The Starch Bandage.—M. Lisfranc objects to the immediate application of this in simple fracture without displacement—as, after the subsidence of any tumefaction or infiltration, the portions of the bones may become displaced, and yet we are unable to ascertain that this is the case. To ensure the case doing well, he considers the daily inspection of the part as necessary, which may be obtained by making a longitudinal section through the bandage—and with this precaution he adopts the starch apparatus in simple cases. Where, however, there is displacement of the ends of the fractured bones, the swelling which is present may prevent the surgeon assuring himself of the exact adaptation of the parts; and, after such swelling has subsided, or by reason of the atrophy resulting from long-continued pressure, a considerable interval may be left between the apparatus and the limb. The exact contact of the parts may also disappear during the application or drying of the bandage. But if the fracture be very oblique, even by the aid of an opening in the bandage, how are we to re-adjust the parts when displaced, or how apply any additional compresses or splints that may become necessary?

The number of badly united fractures after the use of the starch bandage that the author has met with confirms his objections to it. It should not be employed in any case having a tendency to displacement, until the callus has become sufficiently solid and straight to prevent any fear of a vicious direction resulting. It is also objectionable when any wound of the soft parts complicates the fracture—especially from the possibility of the occurrence of suppuration, and the difficulty of giving issue to the pus. It frequently occasions by its hardness irritation and excoriations of the skin—a circumstance of some consequence in the aged. Patients commit a great error by attempting to use their limbs too soon after the application of this bandage.

The author alludes to two cases of *Fracture of the Spine* in which the advantage of the antiphlogistic treatment was conspicuous. Each patient was submitted to nineteen bleedings, and the application of many leeches within twenty-one days—accompanied by a rigid diet. In one case the paraplegia was removed, and in the other, the patient could walk upon crutches.

In *Fracture of the ribs* the bandage, as ordinarily applied, by acting exclusively upon the transverse diameter of the thorax, often assists in thrusting the broken ends of the bones inwards. M. Lisfranc applies compresses of two or three inches in thickness along the whole length of the sternum. Compression now acts from before backwards and *vice versâ*; the arc of the thorax is augmented, and the fractured bones are carried outwards.

In fracture of the *Surgical Neck of the Humerus*, the pad must be introduced to the very summit of the arm-pit, for, if it is merely placed against the anterior and posterior borders of this cavity, its pressure will prove much more painful, and yet will not act upon the superior portion of the fracture at all, and upon the inferior but slightly. In regard to the *position* of a fractured limb, Lisfranc considers that, with few exceptions, the half-bent is the best. One of the exceptions is the case of a fracture situated at the upper third of the leg, near the condyles of the tibia. If we attempt to place the limb in the semi-flexed position, the upper portion of the fracture is immediately displaced by the action of the semi-tendinosus, semi-membranosus and gracilis muscles. There are cases, also, in which, by reason of the peculiar position of the broken ends of the bone, the extended position may be required, although in almost all similar accidents the semi-flexed is the most advantageous: *e. g.*—in fractures of the lower-third of the leg.

VI. ON SUPERFICIAL CANCERS, USUALLY BELIEVED TO BE DEEP-SEATED.

Lisfranc's attention had long been directed to the pathological fact, that cancer does not invade at once all the various tissues of an organ attacked by it. Thus, in the stomach, *e. g.* its ravages are sometimes confined to the mucous, to the cellular, or to the muscular tunic of that organ; and, even when all the tissues seem equally involved, a careful dissection will usually point out which has become first affected. So, too, in the examination of the bodies of a greater number of women who died of cancer of the breast in the Salpêtrière, the pleura, though in contact with the disease, was found unaffected. These, and other facts induced the author to inquire, whether the ravages of cancer in an organ might not be curtailed, especially if its tissue formed part of any peculiar structure fitted to isolate the malady. If so, the removal of the superficies, performed in time, might save the remainder of the organ. He first put the idea into practice in a case of cancer of the penis.

"I knew," says he, "that of all operations the amputation of the penis is the one the most repugnant to a patient's feelings. It would seem, indeed, as if a man staked all his importance upon the possession of this organ; the melancholy into which the idea of this mutilation plunges him, proves this to be the case. A very remarkable fact is, that the aged man seems to suffer equal chagrin with one in the prime of life. When these patients survive, which is by no means frequently the case, they never manifest that feeling of gratitude towards the surgeon, so commonly seen in patients who have been operated upon: they shun him as if once the author and the witness of the degradation to which they believe themselves to have been subjected to." 117.

He began his operation with what he calls an exploratory incision, in order to examine whether the corpus cavernosum yet remained in a healthy condition, so as to admit of the organ being saved. Finding this to be the case, he removed the cancerous part by a "long, painful, and difficult dissection," and the patient perfectly recovered, performing afterwards his generative functions in a satisfactory manner. In the next case, the testes and cord were laid bare by a laborious dissection, the penis almost detached

from the body of the pubis, and the cancer pursued to the roots of the corpus cavernosum, which, "exposed, as if prepared for an anatomical demonstration," showed here and there signs of cancerous deposition that had to be removed by the forceps and scissors, the surface being afterwards well scraped with a bistoury. The cure was perfect, and the extent of cicatrization such as can only be imagined by those accustomed to the wonderful reparative powers of nature. Many cases, very formidable in appearance, have been similarly treated by the author. The same success has, also, often attended his operations for cancer of the tongue, the vagina, the lower extremity of the rectum, and the parts surrounding the orbit. Cancer of the *nose* almost always spares the cartilages, and, by careful dissection, the ablation of the organ may be avoided. Moreover, the skin in the vicinity of the solution of continuity produced by this operation, possessing slight mobility, yields but little to the traction of the cicatrix —whence a cicatrization at a very small expense of integument results; and, by taking care to repress exuberant granulations with the nitrate of silver, very little deformity will ensue.

VII. SOME OBSERVATIONS ON CANCER.

That cancer is not *contagious* M. Lisfranc is entirely convinced.

He also denies that there is any *general infection of the system* in this disease. He supposes the disease arises from the development of a greater or less number of tubercles of a malignant nature, which, like ordinary tubercle, may be more especially confined to certain organs. As suppuration attacks and removes tubercles, not simultaneously, but in successive attacks, so cancer might be removed by several successive operations.

From observation upon man and experiment upon animals, M. Lisfranc believes that cancer may be produced solely by common irritating agents. Thus, ulcers, cicatrices, accidental tissues, frequently become cancerous when irritated, while instances of relapse after the removal of such, are very rare. Many persons are very liable to the formation of pimples upon the face, consisting of accidental tissue. No change usually occurs in these until old age approaches, when they either spontaneously ulcerate, or do so in consequence of the irritation of external causes. The pus is scanty in quantity, and, concreting into a thin crust, the patient takes no notice of it. But sooner or later the cancerous condition supervenes if it have not already commenced with the first ulceration. Persons who are liable to the production of permanent pimples upon the nose, should be careful in not exciting their cancerous degeneration by a too rough use of the pocket-handkerchief. Razor wounds in such subjects often produce dangerous ulcerations. As soon as ulceration occurs, if it be not yet cancerous, apply the nitrate of silver, following its use up by mildly stimulating dressings. Even when the ulcer is cancerous, caustic is sometimes used with good effect; but the author has seen such frightful aggravation result from its employment, that he prefers at once removing the part with the bistoury. If a superficial ulceration of a cancerous aspect be seated, not on accidental tissue, but upon a normal texture, somewhat indurated, it may be touched lightly with the liquid proto-nitrate of mercury—with

the intention, however, rather of changing its mode of action, than of effecting the destruction of the tissues upon which it is seated. In this way you will usually effect a cure, especially if you have premised depletion, or afterwards employ it, if any inflammatory action seem to demand it. Fissures of the lips, which, when neglected, so frequently degenerate, rarely do so if they are touched with the nitrate of silver. The same substance is also very useful in the case of a slight erosion of the cheek, covered by a thin, greyish crust. The irritation produced in the faces of old persons, by the accumulation of the matter of the sebaceous follicles, may eventually terminate in cancer.

Whatever book-doctors may think, M. Lisfranc maintains that all experienced surgeons must deny that cancer is always well characterized. In this way he explains Desault's supposed cures of cancer of the rectum, and cites cases of apparently incurable cancer yielding to means seemingly inefficient. He observes, also, that we pronounce many ill-looking sores to be cancerous, merely from the localities whereon we find them, and that we should never so consider them if seen on other parts, *e. g.* the leg. It is well known, also, that syphilis frequently simulates cancer, and the author has often, in doubtful cases, employed anti-syphilitic remedies with the best effect.

The *fragility of the bones* in cancer must be rare, for Bayle did not meet with it in his numerous autopsies. During 18 years M. Lisfranc and his pupils have examined immense numbers of persons dying of cancer, brought from the Salpêtrière, and he has often observed the bones to be anormally soft—so that two or three movements of the saw would suffice to divide a femur.

M. Lisfranc is not deterred from operating, even when cancer has arrived at an *advanced stage*.

"When the viscera are in a healthy condition, the patient not too far enfeebled, and the whole of the disease can be removed without leaving a wound of dangerous extent, sound surgery demands an operation, of which I have had proofs both in Dupuytren's practice and in my own. If art attempts nothing for the unfortunate beings suffering from advanced cancer, a certain death attends them—and what a death! If, on the contrary, an operation be practised, indisputable facts prove that even a permanent, but at all events a temporary, cure may be obtained." 141.

Relapses in ordinary cancer are not frequent enough to allow the opinion of those who denounce operations altogether to have any weight. There is, however, considerable difficulty in establishing in what exact proportion they do occur. The author adds upon this subject:

"I have practised surgery in the hospitals for nearly twenty years, I have paid much attention to cases of cancer, and have operated for it a very great number of times. I have observed the patients afterwards, and have caused them to be observed by others, as far as lay in my power, and I believe that relapse is not a very common occurrence—especially, if, after the operation, means to prevent the reproduction of the disease are adopted by surgeons, who have hitherto too much neglected these. Cancers of the skin, and those developed upon accidental tissues are the least likely to recur. Local bleeding alone will sometimes suffice for the cure of cutaneous cancer; but a persevering trial of this means, in cancer seated in other localities, has not been attended in my hands with any success." 142-3.

Most practitioners admit that cancer is *hereditary:* but, should this contra-indicate an operation? Where the cancerous affection is at once and distinctly developed, its having pre-existed in the family singularly increases the chance of a recurrence. But the author has observed such chance to be infinitely less, when the cancer has supervened upon chronic inflammation (especially of the cervix uteri), or upon the neglected condition of simple ulcerations. Accordingly, as these primary affections are treated, cancer will or will not become developed; and a proof of the truth of this statement may be seen in the diminished number of cancers of the womb, that are observed since the publication of modern works upon the diseases of that organ.

It is generally stated that *enlarged lymphatic glands*, placed near the cancer, and that in such a manner as to prevent their removal, present a contra-indication to the performance of the operation. If, however, these glands are not too voluminous, if they are few in number, non-adherent, and their substance not too hard and irregular, M. Lisfranc counsels an operation—referring to the great success he has met with in dispersing these bodies, after the operation, by antiphlogistic treatment. All enlarged glands are not cancerous, or even scirrhous. Those most distant from the tumour exhibit merely an increase of their normal tissue, while those in its immediate vicinity have undergone the cancerous degenerescence. The tumours which are sometimes developed under the cicatrix, will often, in like manner, yield to suitable means.

In a case of cancer, with or without ulceration, are we to consider the *whole substance of the tumour* as being occupied by scirrhus? While Lisfranc was pursuing his experiments on the cure of cancer by local bleeding, he observed the tumours so treated underwent a notable diminution at their circumference. This induced him to make careful pathological examinations in some fatal cases: and although in a few of these, the whole tumour seemed to be completely occupied by the cancer or scirrhus, yet in the great majority, the morbid change was confined to the centre. The scirrhous nature of the swelling gradually changed into the common inflammatory induration as the circumference was approached. From these facts he deduces some practical proceedings. Thus:—a cancer is of too great an extent to admit of an operation, for the patient would succumb during the healing of the large wound, necessary for its removal. Leeches, proportioned to the degree of strength of the patient, must be applied around the base of the tumour, following them by a large emollient cataplasm, and enjoining a careful diet. As long as the constancy of the pain, and the augmented heat denote the continuance of sub-inflammation, these means must be repeated—the chronic nature of the affection, and the enfeebled state of the patient, however, admonishing us that their repetition must neither be too hasty or too vigorous. In a few days we may have recourse to resolvent applications, and especially compression—yet avoiding the reproduction of inflammatory action. By such means, carefully adopted, and extended over a sufficient space of time, cancerous tumours have been frequently reduced at La Pitié from a size represented by 10, to one of 6 or 4: and, not only has the operation then become practicable, but no more than an ordinary wound has remained after its performance.

Again, a cancer may not be excessively voluminous, but it may involve

such important parts as to render its removal difficult or impossible. By the means mentioned the lessening tumour retires from the vicinity of the nerves, vessels, &c. which may have presented the obstacles to the operation.

Some practitioners, observing the partial diminution of the tumour produced by these means, and ignorant of the principle upon which they have been recommended, reject the operation altogether, vainly believing that they can dissipate the cancer altogether in the same manner—thus giving time for the disease to make fatal progress.

After the operation for cancer the fingers must be carefully passed over the whole surface of the wound, by which means small tubercles, easy of removal may be often felt—they sometimes being completely imbedded in the pectoral muscles. When very numerous they can rarely be completely extirpated, and when left they frequently give rise to the reproduction of the disease. In patients dying a few days after the operation, the author has found hundreds of these bodies, even under the scapula and clavicle, and upon the pleura.

Observation proves that cancer is liable to relapse, in proportion as its progress has been active, or it has been complicated with acute inflammation. This last is to be met by local depletion, continued for some days prior to the operation. Relapses will be less likely to occur, also, if half an inch of sound skin be included in the incision—leaving, however, enough integument, when it is sound, to procure union by the first intention, thereby diminishing the extent of irritation of the wound and subsequent cicatrix. The surgeon's care of his patient must not terminate with the production of cicatrization, but also be directed to the prevention of a relapse, which, when patients are docile enough to obey the directions given them, may usually be accomplished. They must be told, that even when the wound has healed, the cure is only in part completed. All causes likely, whether mentally or physically, to interfere with the health must be sought for and removed.

In persons of a sanguine temperament, or when suffering from the obstruction of some flux, let bleeding be practised; and, if the parts in the vicinity of the cicatrix become congested, a revulsive bleeding of three or four ounces must be employed. The vitality of the susceptible organs must be modified by the use of powdered hemlock, (the extract usually being very bad,) for many months. Beginning with a grain every morning, the dose may be gradually augmented to four. Lisfranc has a very high opinion of this remedy, as a solvent and anti-nervine—and its utility is also well seen as the latter, in the gastralgiæ of women suffering from uterine affections. Occasional mild aperients, exutories, in case of retrocession, and, after omitting the hemlock, the external or internal use of iodine, are other useful means. Much good also results from compression, employed by means of agaric and a bandage, and extending beyond the cicatrix. The cicatrix must not be irritated, especially by too early a movement of the parts. The mildest diet, and, if debility be not present, even abstemiousness, should be enjoined.

VIII. MALIGNANT PUSTULE.

The author agrees with Enaux and Chaussier in dividing the progress of this affection into *four* periods. 1st. When the disease is seated in the mucous tissue of the skin—characterised by itching, the formation of a vesicle, and the flow of a brownish fluid—and continuing usually from 24 to 48 hours, but at other times for a far shorter period. 2nd. When it affects the chorion. This period lasts for two, three, or four days, but in some cases only for a few hours, and is attended with the formation of a tubercle, and vesicular areola, and increased itching. 3rd. When it extends to the sub-cutaneous cellular tissue. In robust subjects, four days may be passed in this stage, but in others a much less time. All the symptoms are aggravated, and much swelling of the part occurs. 4th. When it becomes propagated to the economy at large, producing general symptoms—with which, in other cases however, the disease may commence. In some cases the various periods follow each other with such rapidity as to become confounded, and the whole progress of the affection may not then occupy 24 hours.

The septic and debilitating character of the malady calls for tonics and stimuli from the commencement; and we shall do wrong to await the supervention of the general symptoms. Quinine, either alone, or conjoined with polygala or serpentary, forms the best tonic. These medicines are contra-indicated, when there is a dry, red tongue, or tender belly. Ipecacuanha relieves the "embarras gastrique" efficiently, and where the intestines are also at fault, a laxative may be joined. Bleeding must be entirely discountenanced. Lisfranc once saw the case of a robust young man, in which some leeches had been applied prior to the appearance of any general symptoms. The blood poured fast from the bites, and the patient died next day.

M. Lisfranc, observing that the caustic applied to the gangrenous parts and their *immediate* vicinity, by reason of their destruction or debility, did not produce sufficient re-action to raise a "barrier of inflammation" to the progress of the disease—conceived the idea of applying the actual cautery, here and there, around the disease, but at a distance of two, three, or four inches, from its margin. In this way a larger surface would be implicated, a higher degree of salutary irritation produced, while, in parts not yet attacked by the disease, and retaining their vital energy, the requisite re-action would be more likely to occur.

Great success has attended this practice. Where this is objected to, he binds over the centre of the part for a few hours, in an early stage of the affection, a small portion of potassa fusa, or butter of antimony, renewing them if necessary, and dressing with digestive ointment. The action of caustic substances is favoured by the use of the chloride of sodium.

IX. THE REMOVAL OF THE FIRST DRESSINGS AFTER OPERATIONS, &c.

M. Lisfranc, having observed the great sufferings patients endure during

the dressing of their wounds, when this is delayed until the third day, arising from the constriction of the bandages, the adhesion of the lint, plaisters, &c., agglutinated by dried blood—to which may be added the frequent production of erysipelas—has been long in the habit of merely applying after the operation a pledget, in which holes have been cut, well spread with cerate, and extending far beyond the edges of the wound. This he renews at the end of twenty-four hours, without pain or inconvenience to the patient. In the present work he is chiefly employed in proving his priority in this practice, since adopted by others without acknowledgment; but he takes occasion to observe, that he continues to have daily opportunities of witnessing its excellent effects.

X. ON SPRAINS.

These occur especially in the ginglymoid joints. Their ligaments are numerous and strong, and although, by the resistance they offer to external violence, they frequently prevent luxation, yet the traction and torsion to which they are subject render them very liable to become sprained. The parts of the orbicular joints are so differently disposed, that, while their movements are more varied and extensive, their liability to displacement is greater, and the sprains occurring in them are slight and infrequent.

Even a simple sprain, when neglected, may lead to a serious secondary affection, especially in the scrofulous, gouty, rheumatic, or syphilitic subject—in whom it may, as also sometimes in even healthy individuals, terminate in true white-swelling.

Refrigerants are useful when applied very soon after the accident; but they must be applied without intermission, (lest an injurious re-action be set up,) and discontinued as soon as inflammation is observed, which they will only aggravate. The application of bandages, steeped in cold and astringent fluids, and the use of irrigations, are disapproved of by the author. As soon as the practitioner sees the patient, whether cold has been had recourse to or not, and even during its application, he must bleed him from the arm, for the purpose not only of counteracting inflammatory action, but also of facilitating absorption of the effused fluids. Leeches are not proper, and especially when applied to the ecchymosed parts, where they may cause gangrene. If the subject will bear it, the bleeding is repeated two or three times in the twenty-four hours, and afterwards revulsive depletion is to be practiced at some distance from the seat of injury. A large emollient cataplasm is the best local application. In five or six days the pain will have disappeared, the effusion become absorbed, and a mere œdematous condition of the parts remain. Discontinuing the above means, we now resort to compression by means of agaric and a circular bandage—properly adjusted, however, according to the peculiarities of the joint affected, or the swelling may become increased rather than diminished. In this way the most violent sprain may become cured in fifteen or twenty days, and the joint restored to its normal volume and movements. Another week may elapse before gradual attempts at walking are allowed.

None of that debility of the joint, which so often leads to relapse in the

common mode of treating the affection is present. In some cases, a greater degree of pressure, by means of graduated compresses, is required. In others the effusion resists all these means, when diuretics may be prescribed with great success; and, in feeble subjects, these medicines may be advantageously substituted for the bleedings. Purgatives are also of great utility.

XI. On Burns.

Life may become endangered after burns during the period of irritation, that of inflammation, that of suppuration and the resorption of pus, and from prostration. The author recognizes five degrees of burns, according to the extent of injury inflicted. He has found the solution of the *chloride of soda* an excellent application. It acts as an astringent and sedative, affording rapid relief to suffering, preventing an increase of inflammatory action, and dissipating this when it already exists. When there is a solution of continuity, without an eschar, it possesses in a great degree the power of inducing a plastic exudation, which becomes at once organized, as it were, like a false membrane. It is developed from the circumference to the centre, and rapidly closes up the solution of continuity. It will produce the same effect in the more advanced progress of the affection, when the granulations have become developed. The cicatrix resulting from its use is far more solid than one obtained from any other mode, and is not formed at the expense of the integuments of the edge of the wound, but from this new tissue. It cannot be used, however, empirically, for if the inflammation be very severe and phlegmonous, it may become aggravated by the chloride, which may delay the separation of the eschar. So, too, it cannot be used to arrest gangrene, arising from excessive phlegmonous inflammation. The strength of the solution employed must be regulated by the degree of irritation which it produces. This should be but slight—subsiding in ten minutes or a quarter of an hour. It acts far more efficaciously when the mucous substance of the skin is laid bare, than through the epidermis. A pledget, having several apertures made in it, and thickly spread with Galen's cerate, is applied over the whole surface of the burn. Upon this a mass of charpie, at least two inches in thickness is laid, and kept saturated with the chloride—the whole dressing being covered with a dry compress and bandage. The charpie must be moistened with the chloride six or eight times a day, and the whole dressing renewed every twenty-four hours. In winter, or when the prostration is great, the applications should be warmed; and, when the surface of the wound is extensive, portions of it should be dressed as fast as exposed.

The author was led to the use of the chloride of soda (which is better than that of lime) in burns, from having derived so much benefit from its employment in the treatment of ulcers. The rapidity of the cure is very great, and under its use superficial burns, even of a very great extent, are not found to be fatal. He thus sums up the benefits derivable from this application.

1. The pain is relieved, the inflammatory action and excitement of the

nervous system diminished, and re-action prevented. 2. The cure is prompt. 3. The fall of the eschar is facilitated. 4. A better cicatrix results. 5. Many patients by this means may be relieved, who by the ordinary modes of treatment would have died.

Many useful observations upon the importance of position and bandaging, as preventives of the formation of vicious cicatrices, and upon the operations necessary for their removal, will be found in the work. The author has found considerable pressure very useful in cicatrices accompanied with tuberculous swellings, or enlargements of tissue, whether resulting from burns, or other solutions of continuity—as also in relieving the preternatural redness of cicatrices. The compression must be very considerable (sometimes by means of leaden plates) and continued long after the apparent necessity for it has ceased.

XII. OBSERVATIONS ON BLEEDING FROM THE ARM.

M. Lisfranc gives a detailed description of the usual course of the veins at the bend of the arm, and then alludes to their frequent irregularity.

"Everybody knows that the direction, number and volume of these vessels are subjected to great variety; but it is a very remarkable and important fact, that the nearer the veins are placed to the external side of the limb, the seldomer do we find nervous filaments in their vicinity. The musculo-cutaneous nerve disengages itself from between the brachialis anticus and the biceps at about the middle of the tendon of the latter. Above this point I have never found a nervous filament around the median-cephalic vein. From the anatomy of the parts it results—1. That the upper part of the median-cephalic vein offers the most eligible point for venesection. 2. That in subjects, whose muscular system is well developed, the supinator radii longus covering, during the pronation of the forearm, the musculo-cutaneous nerve and the tendon of the biceps, we may bleed a little lower down. 3. In cases where the muscles are small, to the pronation of the limb, we must add slight semi-flexion. 4. When we cannot open the median-cephalic, we must select another vein, in the following order:—the continuation of the cephalic; the radial cutaneous; the median. But we must not omit to observe, that if this last vessel crosses the interspace formed by the supinator longus and pronator teres muscles, it will be always in contact with nervous filaments, whose lesion would be inevitable, and that, in subjects in whom the muscular system is slightly developed, the radial artery, then seated immediately beneath the ante-brachial aponeurosis, would be in danger of being wounded. The vein then should only be opened when it is seated externally or internally as regards this space. The great number of filaments of nerves accompanying the superficial ulnar veins seems to forbid our opening these; and where choice is only left between these and the median basilic vein, I prefer the latter. Whenever I have been lecturing upon the subject of bleeding, I have always requested any of my pupils, who may have had the median basilic vein opened, to show me the cicatrix; and, astonishing to say, I have always found this situated at the point where the vein crosses the artery—the vessel being here rather more projecting than elsewhere. It should be opened on the outer side of the artery: but when its anastomosis with the median cephalic takes place too near the inner condyle to admit of this, we are obliged to open it on the inner side, though at the risk of puncturing the median nerve." 264.

Surgeons would seldomer renounce bleeding as impracticable because

the vessels were not discernible, if the ligature were allowed to remain applied to the arm for a longer period than is usual—say half or a whole hour, during which time the patient should frequently contract the muscles of the arm. Placing the limb in a warm bath may sometimes succeed, but, at others, it has the effect of reddening the skin, tumefying the cellular tissue, and thus rendering the vessels still more obscure. The subcutaneous veins, especially those of the lower extremity, are charged with much less blood in the morning, after the patient has passed the night in bed; and, before bleeding can be practised, it may be necessary to exercise the parts somewhat.

Anatomical examination proves that the volume of the vascular system is proportionate always to that of the muscular; and, thus, women who live in idleness, as regards the use of their arms, will be found to have their veins always flattened, covered with an abundance of cellular tissue, and very difficult to open. It is in these cases, in opening the median basilic, we risk wounding the artery, to which the vein seems, as it were, almost attached.

When veins cannot be elsewhere found, and bleeding is yet required, we must remember that the cephalic is constantly to be found in the interspace of the deltoid and pectoral muscles, where an incision may be practised, and the vein then opened.

As often as possible, the vein should be opened *below* the cicatrices of former bleedings, as pathological anatomy proves that these sometimes contract, or even obliterate the vessels. When a vein cannot conveniently be opened elsewhere, we must not hesitate to open an old cicatrix. When, however, a second venesection is required, shortly after a former one, it is better to make a new opening in a vein, as manipulating the old one too much, in order to produce a renewal of the bleeding, may give rise to a phlebitis.

XIII. On the Tying of Arteries.

For the compression of arteries during operations, M. Lisfranc prefers the fingers to the tourniquet.

"The mode of compression, beyond dispute the best, is the application of the fingers, unaided by any instrument, upon the track of the artery. When the vessel is superficial one hand suffices; but two are essential when it is deep-seated. The fingers, employed alone, presenting as they then do mutually opposing points, are the best means that can be employed for the suppression of hæmorrhage from the arteries traversing the substance of the lips, the ears, the ala of the nose, &c. So, too, in the extirpation of a tumour having a delicate cyst, and adhering firmly to the skin, which has much diminished in thickness, if hæmorrhage occurs from the division of a great number of small vessels, the progress of the operation will be obscured and interrupted, unless compression, by means of the fingers, be made around the incision. The instrument invented by Lusardi is however, preferable in operations about the eyelids. This mode of compression is the sole applicable one, when we desire to compress the abdominal aorta, the iliacs, the carotids, &c. It is more certain than any other, because the assistant feels the vessel while he suspends the course of the blood through it. If the fingers are displaced, an instant serves to replace them in—

an advantage attendant upon no other means. So, too, accordingly as the ligature of the arteries may require a diminution or cessation of such pressure for a while, it can at once be re-established if necessary. The fingers, too, compress a much less space, and do not bruise the tissues concerned like the pad of a tourniquet does. It will be objected, perhaps, that I give the preference to a means which requires much practice to employ, and that few persons can be found able to compress with their fingers alone for a sufficiently long time. This is purely imaginary. Why do persons fail in the endeavour? Because they press with a hundred times more force than they need—for, it is certain, that a very slight degree of pressure is required to arrest the flow of blood through the largest artery, and thus the assistant cannot become fatigued." 278.

All the steps practised in the operation for securing an artery are amply detailed, but they need not other notice here. Some remarkable cases are also given, to one of which we may allude—*Ligature of the External Illiac for an Aneurysm of the Femoral Artery.* The aneurysm was situated where it gives off the profunda. With great pleasure we quote the following admirable remarks of this celebrated surgeon respecting operations.

"In spite of all my certainty of accomplishing it, which my habit of performing operations, and demonstrating them to others, during eighteen years, has given me, I did not think it right to practise so important a one as this, without examining anew parts which I had so often lectured upon. By acting thus you take with you into the practice of surgery clear and precise ideas, and will not resemble those rash operators who impudently undertake anything, without considering what they are about to do. I entreat you never to act otherwise, when serious operations present themselves to you, the bad execution of which may risk the safety of the patient who has entrusted himself to your care—and then, even if a misfortune does occur, you, at least, have not to suffer from the consciousness of having neglected those precautions, which humanity demands at your hands. More than most others, I might, perhaps, have dispensed with such a precaution—yet without any hesitation, I dismissed all vanity on this score, in favour of the interest of my patient." 301.

He thus describes his mode of exposing the artery.

"The external extremity of the incision was situated at two lines above, and an inch on the inner side of the anterior superior spine of the ilium, and the internal extremity at an inch and one-third on the outer side of the spine of the pubis, and about an inch above its level. I thus avoid, as far as possible, the inconvenience attached to Abernethy's operation—the perpendicular section of the abdominal muscles, increasing the subsequent liability to hernia. I also avoid the too great length of the incision recommended by Cooper, which exposes the spermatic chord, the epigastric, and circumflexa ilii arteries to risk of injury. When I had completed the incision of the skin, fascia superficialis, and aponeurosis of the external oblique, I laid aside the cutting instrument, in order that I might draw aside the muscular fibres with my fingers—dividing some fleshy bundles with a probe-pointed bistoury. I detached the fascia transversalis below, and then opened it. Next, employing the palmar surface (instead of the points) of my three middle fingers, I pushed back the peritoneum in order to expose the vessels. I did not employ a grooved director in detaching the slight aponeurotic cellular expansions which serve as a sheath to the vessels, but employed the nail of my index finger as more convenient and less likely to injure the peritoneum. I could now easily feel the artery, and distinguish its relations to the vein and nerve, and, by stretching the edges of the wound, I was enabled to see these quite distinctly," 303.

The peritoneum presents far more resistance than, from its thin texture, one would be led to expect, and, in raising it with the flat surfaces of the fingers carefully, no danger of its rupture exists. The case exhibited forcibly the greater difficulty that exists in operating upon the living subject than in experimenting upon the dead. The man was a muscular subject, and the contractions of his muscles narrowed much the margins of the aponeuroses, and impeded the movements of the fingers, when raising the peritoneum. The struggles of the patient, also, thrust the viscera, fatty tissue, and the peritoneum, into the edges of the opening, and thus added much to the difficulty. The pulsation of the artery, on the other hand, is a great guide and assistance. The operation, including the intervals of delay caused by the struggles of the patient, and the examination of the cessation of pulsation in the tumour, only occupied a quarter of an hour.

The patient was bled several times during the first few days after the operation—cerebral and pulmonary congestion having become manifest. The ligature came away on the 21st day. The wound continued long unhealed, and, even at the 92nd day, a fistulous opening remained. Eventually this healed up, and the man perfectly recovered.

Eighteen months after the operation, no pulsation could be felt in the femoral, popliteal, posterior tibial, or dorsal arteries.

XIV. FALSE PRIMARY ANEURYSM.

M. Lisfranc once met with a case of fracture of the leg, in which the tibial artery was wounded, and an abundant infiltration of arterial blood into the substance of the limb occurred. This was accompanied by distinct pulsations in the course of the artery, and at the seat of fracture. Authors who state that diffused aneurysm is always unaccompanied with pulsation, are therefore in error.

Sometimes, after the wounding of even large vessels, hæmorrhage does not result for several days, the immediate effusion of blood being probably prevented in these cases by the application of a muscle over the small arterial opening. In other cases, a musket-ball has irritated the walls of an artery, and these have only given way as a consequence of subsequent inflammation. When great tumefaction of a limb occurs some days after an accident only, it must not be indiscriminately attributed to inflammatory action, as it may have resulted from the separation of an eschar from the walls of the injured vessel. The rapidity with which the swelling occurs is a better guide than the mere epoch.

When a ball has penetrated deeply into the tissues of the arm (*e. g.*) and hemorrhage subsequently occurs, the arteries, however, still pulsating below the wound, ought we to tie the brachial artery above the seat of injury? After such an operation the author has often known the hæmorrhage reproduced. If the wound is not too recent, if granulations are present, and if the inflammatory process is still going on, let the orifice of the wound be plugged up; and, as, in such a state of the parts, the blood will probably be unable to infiltrate, it may accumulate and coagulate in the track of the wound, and become a means of compressing the bleeding

artery. In about a week we may gradually evacuate the coagula. This means has been repeatedly employed with uniform success by M. Lisfranc.

XV. NECROSIS AND CARIES.

Necrosis.—The author impresses upon his readers the importance of giving every possible chance to a limb, prior to determining upon an operation. He also cites, with great approbation, the researches of M. Malespine upon scrophulous necrosis. The spongy tissue of the bones is infinitely more frequently affected in this disease, than the compact. It almost always commences within the substance of the bone, rarely at its periphery, and still more rarely at the soft parts. It extends from the centre towards the circumference, and is arrested at the periosteum and cartilages. These parts form a "reproductive envelope," contained within which is found a sequestrum of greater or less size.

"This envelope is thus formed. The periosteum thickened and tumified, by reason of its function of secondary ossification, sends a fibro-vascular prolongation beneath the articular cartilages. This prolongation, which in the normal condition is not visible, becomes so under the influence of the phlegmasia induced by the presence of the sequestrum. It is adherent, to or rather intimately blended with the cartilaginous portion, which it lines. Sometimes it is red and fragile, at others considerably indurated. However this may be, it always accompanies all the phases of the reparative process, so that the primary cartilage covers the secondary ossification. It results from the curious disposition of parts, that these cartilages, placed at the boundary of the disease, are continuous with the periosteum, of which they may be considered an appendage—that after the cure, whether spontaneous or produced by the extraction of the sequestrum, they are always found at the periphery of the regenerated part—that they thus constitute at once a bond of union between the new production and the neighbouring bones, and smooth surfaces by means of which the various motions may be executed." 340.

The investigations of M. Malespine have also convinced him that the cavities, often found in the spongy texture of the bones of children, are not encysted tuberculous disease of the bones, as they have been represented to be—but the last stage of central necrosis, in which the sequestrum has become wholly or in part absorbed.

Caries.—Many practitioners feel surprised at the great success they meet with, in some cases, in the employment of the actual cautery, (which is preferable to the potential) and their complete failure in others, apparently identical. This arises from using the means empirically. It is improper to employ it when the soft parts are in a state of acute inflammation, for the bone participates in this, and it should be previously allayed. When the remainder of the bone is found, by examination with a probe, to be very soft, antiphlogistics are required, if the patient is strong and inflammation present. Otherwise, bitters, iodine, &c. may be useful; the cautery would prove hurtful where this softened state is extensive and considerable.

XVI. Nervous Ophthalmia.

The chief symptoms are photophobia and lachrymation. The conjunctiva is somewhat reddened, but there is no change in the cornea or inner coats of the eye. The antiphlogistic treatment fails in these cases. The author has often found the smearing a little moistened, good *extract of belladonna* upon the temples, and around the base of the orbit night and morning, has effected, in a few days, the cure of cases, which had long resisted other means most obstinately.

XVII. Indurated Tumours situated within the Substance of the Eyelids.

These occur especially in women, reaching sometimes a larger size than that of a bean. They are hard in texture, and placed near the margin of the eyelid. The skin covering them may remain healthy, or become inflamed, or even ulcerated, while the corresponding portion of the mucous membrane is found also of a deep red, or ulcerated. The accompanying inflammation must be met with antiphlogistics, but these will not usually dissipate the tumour. To effect this, after the inflammation has subsided, or if it has never appeared, the iodide of lead, (a better application than the hydriodate of potass,) should be applied. If suppuration occurs, a very minute aperture should be made. When the inflammation is trifling, a very slight application of a point of nitrate of silver, every six or eight days, to the reddened or ulcerated part, will be found useful. One application is usually sufficient, but three or four may be required. Extirpation must be had recourse to where the affection obstinately refuses to yield to these means.

XVIII. General Rules for the Extirpation and Removal of Tumours.

The following general principles, M. Lisfranc reprints from his work on Operative Medicine.

1. "A rule never to be lost sight of, is, that the cutting instruments should be used with a saw-like, rather than a pressing movement. I have found this one of the most difficult principles to impress upon the pupils, in my courses of operative surgery.

2. "The integuments should be stretched by the palmar aspect of the hand in an inverse direction to that in which the incision is to be made. When the operator wishes to make his incision from left to right, he should stretch the integuments by means of his left thumb towards himself, and by the ulnar border of the hand and the index and middle finger in the opposite direction. A more complete tension and a more ready and clear incision of the parts can then be made.

3. "To expose a superficial cyst, or one having very thin walls, or to open a hernial sac, the operator should stretch the tissues with the palmar aspect of his thumb and index finger, carrying his incision between these, nearly parallel to their axes.

4. " When the skin is very moveable the surgeon requires an assistant to produce the requisite tension.

5. " When by stretching the skin, parts which serve as a guide for making the incisions would be displaced, (as the raphe of the perineum, and some of the folds of the skin at the articulations,) the integuments should merely be steadied in their situation by the three middle fingers, pressed perpendicularly upon them.

6. " The incisions should be made parallel to the axes of the muscular fibres. If, however, a lesion of the large vessels or nerves is feared, we must cut in the direction of the axes of these latter. In operations about the forehead the incision should be carried transversely, in order that the wrinkles of this part may conceal the cicatrix. The providing a free exit for the pus, and the prevention of the interference of the cicatrices with the movement of the parts, must also guide our operations.

7. " The incisions should be commenced and not terminated nearest the origins of the nerves of the part. By interrupting the communication with the sensorium at once, any subsequent section of the nerves, that may be necessary, will be attended with much less suffering, than if the communication still existed.

8. " If dangerous lesions are not feared, the incisions should be continued a line or two beyond the extent of the tumour, giving greater liberty to the surgeon, and preventing the necessity of afterwards enlarging the incision, in case the tumour extends farther than was expected, which is frequently the case.

9. " When it is feared that superficial parts may be injured, we must divide the tissues horizontally, by means of a bistoury cutting on its convex edge. In these cases slowness of procedure is of the first importance.

10. " When two incisions unite but by one of their extremities, the second should always terminate in the first. If it commences in it, the skin, already divided and moveable, is not sufficiently stretched to prevent its receding before the scalpel, which divides it imperfectly and with difficulty." 382-4.

The author gives ample directions for making the various description of incisions; and offers some very interesting observations upon the difficulties which may occur during the removal of tumours, and the means of surmounting them. Our want of space prevents our doing other than refer to these, as well worthy the attention of those engaged in the practice of operative surgery.

A case is related of the extirpation of an encysted tumour, the size of a fist, extending some inches downwards from the mastoid process—so as to be in juxta-position with the " three carotid arteries." M. Lisfranc commenced the operation, by what he calls a preliminary incision, carried through the whole longitudinal diameter of the tumour. This proceeding he recommends as much facilitating the future steps of the operation, and illustrates it by alluding to the much greater ease with which the peritoneum can be separated from the walls of the abdomen, when an incision has been made into this cavity, than when none such has been premised. The cyst was easily detached from the sterno-cleido, larynx, &c., and with more difficulty and great caution from the important vessels with which it was in contact. The cure was complete in fifteen days.

We conclude this chapter with the following extract:—

" Is it possible to diminish the size of an encysted tumour containing fluid, so as to render its extirpation more simple? In proportion as this tumour has become developed, it has drawn towards it the surrounding skin, which thus becomes displaced in proportion to the degree of the projection of the tumour. Let the cyst be punctured at its least dependent part, so that it does not empty itself completely, and escape from under the scalpel during the dissection. At least

half the fluid will flow out and the tumour will become diminished in size. The integuments, now less on the stretch, will to a considerable extent recover the position they occupied when the cyst was but slightly developed. It is evident that the extent of skin to be cut through will be much less, the dissection less difficult, the pain less severe, and the wound less extensive. We may mention that we have derived great advantage from this plan in the puncture and injection of hydrocele. 412.

XIX. TREATMENT OF LUPUS.

Caustics fail in this affection frequently because they are applied with so little discernment. Prior to their use inflammatory action must be subdued. When this has been relieved, the *proto-nitrate of mercury*, which rather modifies than destroys the surfaces it is applied to, changes the action of the sore and secures its cicatrization. But, whenever an excess of irritation is excited, this must be first allayed ere benefit is derivable from the application. To subdue this, general bleeding, not leeches, must be employed—for, the bites of the last, even when placed at a distance from the seat of the disease, will often degenerate into foul ulcers. Three or four ounces of blood taken at as remote a point from the disease as possible, will act revulsively; but, if the irritation is great, depletory bleeding will be required. The caustic may be required to be applied every week, until the foul character of the sore is removed, and a mere simple ulcer remain, for which it would be misplaced and hurtful. When the ulcer is very large, the caustic need only be applied at certain points, and yet the remainder of the diseased surface will become modified, though untouched by it. The author alludes to a patient, who had two phagedænic sores, one on the thigh, and the other on the abdomen. The first only was touched with the proto-nitrate, and yet the other which had been long stationary, underwent also an important modification and cicatrized.

Relapse in this disease is frequent, but much less so when judicious internal treatment, proper attention to diet, and an occasional bleeding after cicatrization, are attended to. If it have long existed an issue should be opened at some distant point.

A general remark may be made, that dartrous and herpetic maladies are too generally treated by excitants, and many more would be cured if bleeding and emollients were employed as substitutes, or at all events as preparatives for these. So, in treating various forms of ulceration, the inflammatory complications are overlooked, and the most powerful means fail. Depletion much assists the effect of mercurials, united with sudorifics, in the treatment of obstinate lues. Many ulcers of a very suspicious character, when not surrounded by very extensive induration, are cured by the combined use of depletion and caustic. Ulcers of the tongue, which would otherwise have been condemned to an operation, have been frequently cured in this manner.

XX. SANGUINEOUS CONGESTION.

In this chapter M. Lisfranc seeks to make an application of the fact,

that congestion is not inflammation, nor to be treated as such. Thus, wounds, ulcers, &c. as long as the inflammatory condition continues, proceed very well under antiphlogistics and emollients: but, when this condition is subdued, they become stationary if such be persisted in. Although this fact is generally well known to surgeons, yet, he says, interminable and debilitating suppurations, œdema, induration, hypertrophy, and difficult cicatrization, are frequently seen to arise from neglecting it. Compression, and a mildly stimulating mode of dressing are called for. But why should not the same principles be applied to the treatment of visceral inflammations, which may, in the same way, be ill-treated by a persistence in the debilitating regimen and sanguineous evacuations?—especially old gastro-enteritis.

XXI. OBSERVATIONS ON HERNIA.

In reference to the statistics of the mortality from hernia, M. Malgaigne found that, out of 183 operations performed in the Parisian hospitals, between 1836 and 1841, there were 114 deaths.

The author is a strong advocate for the *taxis*, having usually found it succeed, when confided to skilful hands. If four days have elapsed it should not be used, even though there be no local or general symptoms of gangrene—for these are not always present even when it exists. When the pedicle of the hernia is thin—the neck of the sac very narrow—the tumour very hard—or the constricted parts are the seat of inflammation—the taxis is dangerous. During the employment of the taxis, the walls of the abdomen are usually recommended to be placed in a state of relaxation. M. Lisfranc objects to this for the following reasons.

"When the parietes of the abdomen are relaxed, they are applied upon the viscera contained in its cavity. The capacity of the latter is diminished, and the displaced parts are returned with less ease. 2. The relaxed walls of the abdomen will yield to the fingers during the attempt at reduction. 3. The relaxation of the walls of the abdomen prevents the formation of a hernia, while a tense condition tends to produce it.

"I place the parietes in a state of moderate tension, which facilitates the reduction. A comparison may illustrate what I mean. Endeavour to pass the clenched hand through an opening in a piece of cloth, &c. which is not kept on the stretch. It yields before you, and you effect your object with difficulty. If, however, it be stretched in the slightest possible degree, the opening will be passed with the greatest ease. But it will be objected to me, that this tension will narrow the abdominal rings. I reply—1. That it is only a moderate degree of it that I recommend. 2. That the objection does not apply to the crural canal. 3. That the muscular fibres around the inguinal canal are not placed so advantageously for the production of this constriction as may be supposed. 4. If in a thin subject, after the inguinal hernia is reduced, and the canal is spacious, the tissues covering its orifice are pushed through it by the finger, it will be found that the finger is not more compressed during tension than during relaxation of the abdominal parietes." 442.

As to the length of time during which the taxis should be applied, M. Lisfranc has frequently continued it for an hour, and has never seen ill-consequences result from so doing.

In effecting the reduction, M. Lisfranc places himself on the outside of the patient, and above, instead of below the tumour—drawing, as it were, the hernia towards him, and having in this position greater facility in directing it along the axis of the canal. In difficult cases he is obliged to try the ordinary mode as well.

Among the most useful means of facilitating reduction, the author considers the application of leeches to be one. They should not, however, be applied to the hernial tumour itself, as they render the skin to sensitive and the taxis more painful; and, owing to the oozing of blood from the bites, more difficult. Ecchymoses are also formed, which impede and obscure the subsequent steps of the operation. They should be applied around the base, not upon the tumour. He does not use the *tobacco* enema, nor does he consider the application of *ice* to be at all relied upon—while it sometimes produces gangrene of the skin.

Purgatives, after the reduction or operation, if stercoral collections exist, may be required, but, if there is any tendency to inflammation, they must be rejected, until this has been relieved—an effectual means of treating which, consists in the application of layers of mercurial ointment over the entire walls of the abdomen, as recommended by M. Serres d'Uzès.

XXII. On Fistulous Sores and accompanying Indurations.

As fistulæ may be the cause of the indurated state of the parts which surround them—so frequently indurations maintain the open state of fistulæ. Thus, M. Lisfranc relates cases of induration and callosity of parts accompanied by fistulæ, in which the latter were relieved in proportion as the former were removed by antiphlogistics, emollients, compression, iodine, &c. When, however, the fistula still continues unhealed, an injection of the *chloride of soda* seems to have great power in inducing a plastic secretion, and causing a cicatrization of such parts of the skin as have become denuded of cellular tissue. If the injections are used for several days without beneficial effect, they should be suspended, and compression then often proves of advantage. They usually fail because they are not used perseveringly enough, and the alternations with compression have not been frequent enough—say, six, eight or even ten times repeated. But the great error in the treatment of all chronic affections is this want of perseverance in the use of remedies, and the hasty adoption of a variety of new ones, before any one of the number has had a sufficient trial. If the fistula be a recent one, it may be cured by mere emollient injections, and these will sometimes succeed, even in obstinate cases, when more active measures have failed. The solutions of nitrate of silver, or of the protonitrate of mercury, are also valuable injections. This last must be cautiously and sparingly used—for the mere touching the fistula with it in a portion of its track, will, in many cases, induce the uniting process throughout its course.

XXIII. THE RESOLUTION OF INDURATED TISSUES BY INCISIONS AND SCARIFICATIONS.

It was formerly believed that the indurated tissues, seated around fistulæ old ulcers, caries, &c. would not, if saved in amputation, be ever capable of restoration to a normal condition. Many also believed they might degenerate, and cause long-continued suppurations, &c. These opinions gave rise to the practice, which M. Lisfranc also long followed himself, of including these indurated parts within the sphere of the operation—and thus, *e. g.* if the leg were so affected to a considerable extent, the amputation not of the leg, but of the thigh, would be determined upon. An observation made by Ambrose Paré, and his own practice in white-swelling, led him to believe that the loss of blood, and the subsequent production of inflammatory action in these tissues by means of incisions, might prove the means of restoring them. By trying experiments first on a small, and afterwards on a large scale, he soon found this to be the case. The diminution in the size of the parts, which will subsequently thus be produced, must always be borne in mind, in apportioning the quantity of skin to be left as a covering to the stump. If a violent inflammation seize the wound, these tissues, endued with but a feeble vitality, may fall into a state of gangrene. To prevent this, care must be taken to prevent the attendant inflammation reaching too high a pitch, by the use of leeches, cataplasms, and, if suppuration have not commenced, by revulsive bleeding. In a week, and in some cases in a fortnight, the indurated tissue often reacquires its normal condition. The incisions may sometimes be required to be both long and deep.

Scarification of the indurations surrounding ulcers had not been practised since Paré's time, until revived by M. Lisfranc. They are not to be employed indiscriminately, or practised too close to each other. Leeches and poultices may be required to subdue any excess of inflammation they may be followed by; but, there are other cases, in which the excitement induced proves insufficient to produce the resolution of the induration. They must not be repeated until the inflammation produced by the former ones has subsided, and the case does not seem to be progressing. If the tissues have become somewhat softened, but still continue enlarged, compression by means of a bandage and agaric is required—to be again replaced by scarification if requisite.

The author considers that the therapeutical employment of inflammation in the practice of surgery, (*i. e.* the excitement of an acute for the purpose of subduing a chronic inflammation), insisted upon by Dupuytren, is susceptible of a far greater application than it has yet received.

XXIV. OF THE SIMPLE OR ATONIC ULCER.

These ulcers are termed *atonic* from the supposed debility of the tissues in which they occur; and in support of this opinion of their nature, it is remarked that they are seated especially on the lower extremities—*the point the farthest* removed from the centre of circulation, and that they

occur seven times out of ten upon the left rather than the right—the former being the weakest member. The author rejects these explanations; for, if the distance from the centre of circulation is to explain the production of the ulcers, we ought to find them more frequently seated upon the feet and toes than upon the legs. During his very extensive experience, he has observed, that many of the patients who had ulcers on the left leg were also left-handed, and, when this was the case, the left side of the body had frequently acquired a much greater strength and development than the right.

"The simple or atonic ulcer, is, according to my views, a gangrenous inflammation, *sui generis*, produced by the slowness and impeded state of the venous circulation. In proof of this: 1. Every one admits that the varicose ulcer is produced and maintained by a stasis of the venous blood. Its stagnation in the dilated vessels produces an inflammation, for the most part slight, which is followed by gangrenous ulceration. Acting more feebly, upon the venous system in an undilated state, the same cause produces the simple ulcer. When recent cicatrices give way, they usually become blue or even black, and it is evident that their rupture arises from stasis of the blood. 2. Supposing the crural vein (*e. g.*) to be wounded at the superior part of its course; you apply compression to restrain the hemorrhage, and thus arrest the passage of blood through the vessel. The stasis of the venous blood increases the volume of the limb, it becomes painful, hot, and then gangrenous—although the crural artery performs all its functions at liberty. M. Gensoul has tied the crural artery in cases which otherwise would have required amputation, and thus, by diminishing the quantity of blood which enters the limb, has prevented the stasis in its venous circulation. 3. In the treatment of ulcers every means for facilitating the venous circulation is employed—such as position, bandages, strapping. 4. Why are ulcers found so much more frequently upon the lower extremities? Why do we find them so much more frequently upon the left leg, and especially between the calf and internal malleolus? Because the venous circulation is performed with greater difficulty in the lower than in the upper extremities. Because the sigmoid flexure of the colon, often filled with fæcal matters, and crossing the left external iliac vein, impedes the circulation in it in a remarkable degree, upon the left side. Moreover, the two primary iliac arteries, by crossing the left iliac vein, produce the same effect of embarrassing the circulation in this latter vessel, not only by reason of the pressure they exert upon it, but by the impulse conferred upon the fluid they contain. M. Serres first demonstrated that the internal saphena vein is destitute of valves between the internal malleolus and the lower portion of the calf, and, indeed, in many subjects there are no valves, and in others only two between the ankle and the knee." 507-9.

The success which has attended the section of the saphena vein in bad ulcers, which would otherwise have required amputation—attacking any phlebitis that may arise by leeches, &c.—is another proof of the truth of the views adduced by the author.

That the inflammation producing the ulcer is a gangrenous inflammation, he considers proved by the fact that, under the phlyctenæ, usually preceding the ulcer, a brown gangrenous spot is found—that the progress and attendant odour are those of gangrenous sores—that eschars are formed if the progress of the case be rapid; and, when this is not the case, by taking the ichorous pus between the finger and thumb, and moving it to and fro, a solid detritus, formed of very small portions of gangrened tissues, may be felt, and will be found to exhale the peculiar odour of

these—that suspension of circulation of the blood in the crural vein will induce gangrene.

The author, speaking of the hæmorrhage resulting from varicose ulcers, says:

"Violent hæmorrhages are found sometimes to complicate varicose ulcers, under which patients have sometimes sunk. In these cases, I have found at the necropsy, that the internal saphena was opened; and, upon dissection, it was seen to be thickened, and its internal coat inflamed. When its walls were cut across their circumference, in all their thickness, they did not collapse, and the canal, besides being anormally increased in size, remained patent—the section resembling that of an artery. Thus, it would seem very difficult for the vein to act upon the fluid which it contained, and, although provided with collaterals extending even to a great distance, it resembled in fact, an inert tube, from which the blood, obeying the unresisted impulse of gravity, escaped without any obstacle, when the ulceration had taken place." 515.

Of the resorption of pus he says:

"The resorption of pus, which is too frequent from the surface of wounds, is very rare in ulcers. Experience has fully proved the truth of this. It is well known, also, that muriate of morphia, applied to a recently blistered surface, is rapidly absorbed, but if the exutory be of old date, then the substance scarcely, if at all, obtains admission into the circulatory passages. These contradictory phenomena have appeared inexplicable; but in old solutions of continuity, there exists upon the denuded surface a newly organized tissue, which is not yet endued with the same degree of vital energy that it will eventually acquire—offering thus a frequently insurmountable barrier to external agents endeavouring to penetrate into the animal economy." 516.

As to the question of whether ulcers (old) should be indiscriminately healed up—the healthy condition of the principal viscera—the patient's general state of health, and the nature of the constitution in each case, must guide our practice. When we have determined in the affirmative, we must not accomplish it suddenly An issue in the leg or arm should also be opened, and bitters, or mild purgatives, as the condition of the patient may require, should be given. If, in spite of all precautions, congestion or inflammation of some important organ does supervene, the cicatrix must be irritated by means of a stimulating ointment, a blister, or even boiling water.

Treatment of Atonic Ulcer.—Absolute repose, and a well chosen position of the part are essential. If the patient be not too feeble, and inflammatory action accompany the ulcer, a bleeding from the arm may be premised, and, even when mere œdema exists, attended with very slight inflammation, the same practice will induce its absorption. As further means of subduing inflammatory action, cleaning the surface of the ulcer, and removing the induration of its edges, emollient cataplasms are required: and Lisfranc has cured many atonic ulcers with these alone, and always continues them as long as cicatrization seems progressing. He has often found strapping the ulcers fail, though, in others, the practice has been attended with excellent effects. He deprecates the modern practice of abandoning the use of unguents, which are often so highly useful. Monesia, used in powder, or as an ointment, is an excellent stimulant application, and another, besides calomel, is a powder formed of five parts of

starch and one of sulphate of alum—with which the surface of the ulcer is to be covered.

The surrounding *indurations*—which both impede the formation of cicatrices, and render them unstable—are to be treated, if inflammatory action exists in them, by leeches, applied at the upper part of the leg; and when this state has subsided, iodide of lead ointment, leeches in less numbers, and compression; and where all these fail, slight applications of the proto-nitrate of mercury to the ulcer itself, or scarifications of the indurations, are the means of relief. When an induration is limited in extent, but horny in texture, it is to be removed like an ordinary tumour.

Since 1825, M. Lisfranc has been in the habit of using the *chloride of soda* to expedite cicatrization. But for this to be useful, the sore must be clean, the granulations in a normal state of development, and cicatrization commenced. It is used in the same principles as in burns, and when properly employed, results are often obtained in a week or a fortnight, which could not otherwise have been procured in five or eight weeks.

It is not less important to secure the solidity of a cicatrix than to obtain one, and the ordinary use of the laced-stocking is an impediment to this. It exerts an equable and considerable pressure over the whole leg. Upon taking exercise, an increased volume of the limb ensuing upon muscular contraction, especially at the calf, the superficial venous circulation becomes impeded, and a stasis of blood produced. The stocking should then be less tightened at the calf than below it, and its descent may be prevented by attaching it to the drawers. The portion of a bandage applied to the calf might be composed of caoutchouc. In spite of every care, the cicatrix too often gives way, and a more obstinate sore than ever is produced. These consequences would be far less frequent if the patient could repose the leg for a few months after cicatrization.

The attempt to obliterate the superficial veins supplying varicose ulcers, has frequently given rise to most serious consequences. But this has been much less commonly the case since the consequent phlebitis has been treated with more skill and success. M. Lisfranc has found most excellent results attend the application of a great number of leeches immediately above the inflamed portion of vein, *i. e.* between it and the heart. The obliteration, however should not be attempted, except in most obstinate cases, defying all other means, and necessitating either complete inaction or loss of limb. All inflammation about the varices must be first removed, and six or eight weeks may be so employed. The usual site of the operation is just below the condyle of the tibia, or, if the vein be affected higher up, the lower and inner portion of the thigh is chosen—avoiding operating too near the abdomen, lest any attendant phlebitis may spread to within its cavity. We must act above the collateral veins, or a sufficient obliteration will not result to ensure the cure of the varices and ulcers. We must, too avoid operating upon the dilated portion of the vessel, or too near the varicosed part, as a condition of chronic inflammation is often present, upon which we might induce an attack of acute.

M. Lisfranc has employed Guerin's subcutaneous section of the vein

but once, and then with success—and he anticipates that this will prove an operation of great utility.

The operation M. Lisfranc himself performs, consists in exposing the vein to about the extend of two inches, dividing it by means of curved scissors at each angle of the incision, and removing the portion so separated—an assistant by compression preventing the access of air into the vein, during its division. Light, graduated compresses are applied, and the wound is healed by the first intention. The patient is to be treated afterwards upon the same antiphlogistic plan as after a capital operation.

Even in simple atonic ulcer, unaccompanied by a varicose state of the veins—when the sore is very extensive—when it is impossible to produce its cicatrization, or that this is continually giving way—when the patient's life is in danger—or that he is compelled to inactivity during most of the year—obliteration of the vein, in the place of amputation of the limb, will be often attended with the happiest success.

Relapse of an ulcer after the section of the vein is excessively rare.

When patients, who had been formerly operated upon for varicose ulcers, have returned to the hospital, in consequence of other complaints, and have died from these latter—the autopsy has shown the internal saphena obliterated from the point where the incision was made to the great toe—resembling the umbilical vein, in the adult. Many of the collateral veins and their branches partook of the same condition. No trace of varices could be found upon the extremity, and the circulation was chiefly carried on through the deep-seated portion of the venous system. In a few patients slight dilatations have been observed near the obliterated vein; but these have been prevented from increasing by the laced-stocking, and have never caused a rupture of the cicatrix.

XXV. THE WHITE-SWELLING OF THE JOINTS.

We need not occupy our space in detailing our author's account of the pathological anatomy of these joints, as our readers are familiar with the more masterly delineations of Brodie. But there are many other points of great interest in the present Chapter—and to these we proceed.

White-swellings may be distinguished into those in which a sub-inflammation is present, and others, in which no trace of this exists. In some cases the inflammation is latent, and in others acute—all which facts are very important, in a therapeutical point of view.

The author considers that they are in error, who state that the mere *engorgement* of the soft parts can always be easily distinguished from an enlarged condition of the bone. He long believed erroneously with others, that a firm or flinty consistence of the swelling was necessarily a proof of an affection of the osseous system. In such a case he now hesitates before he ventures an opinion—especially if the tumour do not present an irregular surface. By suitable treatmemt the induration often becomes moveable upon the bony parts—these last remaining nearly or quite healthy. In such cases, the disease has proceeded from without inwards—the deeper-seated soft parts being those last affected; and, hence, *yielding* to the means employed, they have become soonest cured, and

the more external tissues, remaining indurated, are moveable upon them.

"There is one peculiar form of white-swelling, which, I believe, I was the first to describe. The joint is but little increased in size, and the swelling gives, when touched, the sensation of an elastic or spongy body, such as the spleen or placenta, or a lipoma about to undergo degeneration. Here and there are formed small but very numerous abscesses, separated from each other. When these burst, there is discharged, with the pus, a flocculent matter, produced by the death of the tissues involved. I have as yet never been able to cure any of these cases. At the autopsies I have found a lamellated tissue, traversed by a great number of vessels, and containing white granules, resembling tubercles. This tissue was absent at the points wherein the little abscesses had cicatrized, being replaced by ordinary inodular substance." 574.

He inquires whether it would, in these cases, be prudent to employ means to increase the inflammatory action, and thus expedite the suppurative process. The peculiar tissue in question is at first superficially placed, and might it not be removed by operation, when it occupies but a limited space?

In cases of white-swelling it is very important to be assured of the condition of the thoracic and abdominal viscera; for, where diseases of any of these exist, they have sometimes been found to make progress in proportion as the affection of the joint becomes amended—even requiring that irritation should be reproduced in the latter. When the visceral affection is incurable, but stationary, we do not treat the white-swelling actively, unless it become dangerous: and, in fact, we may have to pay our attention especially to the external or internal malady, as either may become alarming, and, by this temporizing conduct, may often succeed in prolonging the days of the patient, when they would be cut short by a more vigorous procedure. Unfortunately the thoracic and abdominal affections are often *latent*, and resist our means of investigation,—so that, death may speedily follow the cure of the disease of the joint, in consequence of some unsuspected organic affection. Whenever the disease of the joint, without any obvious cause, undergoes many vicissitudes, so that, from being nearly cured, it relapses into as bad a state as ever, we must suspect something wrong in the system, although no special symptom be present.

Abscesses, formed *around* the white swelling, should be opened as promptly as possible, while, when formed *within* the substance of the engorgement, exit must be given to the pus as late as possible—providing the inflammation be not acute—that there be no danger of the pus penetrating the joint—and, that the skin be not denuded of cellular tissue. It is very easy to be deceived as to the existence of pus—while the sojourn of this fluid in contact with the indurations proves to be one of their most powerful solvents. The most experienced surgeons often have great difficulty in deciding whether a collection of fluid or pus be situated within, or external to the joint. The alternative of amputation decides the surgeon in determining to open the collection, and, if symptoms follow, which denote that the cavity of the joint is exposed also, he proceeds at once to amputate.

M. Lisfranc considers that, in general, much too little importance is attached to *regimen* in *chronic surgical disease*. The ordinary, and sometimes an excessive diet is permitted, and the great aid in dissipating

engorgements, derived from allowing patients, in some degree, to, what he calls, "live upon their own substance," (*i. e.* starvation regimen) is lost sight of. He has repeatedly known these tumours, which have resisted every other means, to become dispersed after diminishing the diet by one third or a half. Exceptions will occur to this, when the patient is excessively feeble or scrofulous, and when the digestive organs suffer from the change.

If the patient be strong, and any acute inflammation exist about the joint, one or more bleedings from the arm, and afterwards leeches, will be required. But the periods of employing these must not succeed each other too rapidly—for chronic diseases by their duration frequently induce great debility; and inflammation, seated in these anormal tissues is not susceptible of the same ready removal as when it occurs in healthy ones. Local emollient and anodyne baths, continued for two hours at a time, are useful. Although, by appropriate means, the inflammatory element may disappear in a month, it may persist in other cases for three, six, or nine months, and, to such cases, which may also have resisted mercury and barytes, we must oppose time, and the continued application of small relays of leeches. Eventually the moxa may be employed. It is rare indeed to find one of these swellings dissipated by antiphlogistics alone. A slight diminution of volume only results from the subsidence of inflammatory action.

After the employment of antiphlogistics, an interval must be allowed prior to commencing the use of stimulants—but the presence of occasional pain, or pain which has resisted depletion, must not deter us.

Leeches may be applied for other than the ordinary reasons. From three to six, or eight, placed around the base of the tumefaction, will cause a degree of heat and excitement in the swelling, when torpid, and favour absorption. Five different effects may result from their use.

"1. No effect may result. You wait three or four days and then re-apply them; and if this time you are not more successful, you abandon them—having thus ascertained that their action is too feeble to produce the degree of excitement sufficient to favour the resolution of the engorgement.

"2. The heat of the skin of the part may be slightly increased, and a slight pain felt. Avoid the application of emollient cataplasms, &c. for you will destroy the salutary excitation you have produced. Cover the swelling with a fine linen cloth, and you will soon observe its diminution—which will be often preceded by a superficial and scarcely perceptible ramollissement of its tissue.

"3. The size of the tumour becomes increased by two or three lines, a slight œdema existing in the subcutaneous cellular tissue. These circumstances astonish and frighten the patient, when he has not been prepared for them; but the surgeon congratulates himself upon them, for, shortly not only does the tumour return to its primary size, but, in a day or two, it becomes diminished to the extent of several lines.

"4. The leeches may have produced a still greater excitement. The swelling has become enlarged, hot, and during a part of the day, painful, while the leech-bites become surrounded by a slight erysipelatous circle. These circumstances, too augur well. Almost constantly, at about the end of forty-eight hours the erythema disappears, and a most marked diminution and amendment in the tumour supervenes.

"5. Sometimes ordinary erysipelas follows. We must at once attack it by applying a very great number of leeches, attention to regimen, &c.—in order

that we may prevent the inflammation penetrating the subjacent tissues. When the erysipelas disappears, the strong excitation of the parts it occasioned, will be found to have expedited the cure in a notable degree." 593—4.

The leeches may be repeated, in these small numbers, whenever the amendment they produced becomes stationary. The bites must not bleed for more than a quarter of an hour, so that the patient does not become weakened by the loss of blood. They may be frequently renewed, but, as after a time, the economy becomes habituated to their use, they cease to produce the same effects. But if in this case, we suspend their employment for a while, upon recurring to them, they are found to succeed as well as ever. They may also often be used with advantage in combination with, or in succession to other means, as compression, &c.

Cupping, also, may be substituted for leeches, and like them, acts as an antiphlogistic or stimulant, just in proportion to the quantity of blood drawn.

Compression is useful by preventing the too free access of blood to the tumour, and causing a slight degree of excitement at its surface. It is most advantageously applied so that it may extent an inch beyond the circumference of the tumour. If employed in improper cases, it may occasion inflammation or gangrene; and, in all, requires regulation in its various degrees, according to the stages and peculiarities of each. Thus, the mere application of diachylon, the use of bandages and agaric, and the application of leaden plates to the part, excite different degrees of compression. The compression may be re-adjusted every twenty-four hours, and its employment does not exclude the use of iodine ointments, and the various internal remedies. Even after the tumour has disappeared, especially when of a scirrhous consistence, compression must be continued for several weeks longer.

It is to be rejected—1. When considerable inflammation exists. 2. When the tumour, though small, is very hard, unequal, knotted, adherent to the skin, and especially if this latter be red or discoloured. When, however, the scirrhous mass has been removed, we may employ pressure. 3. When the tumour is in some parts indurated, and in others pultaceous.

The author believes Dr. O'Beirne's conclusions, concerning the utility of *salivation* in these cases, are too general, and too premature. This practice is attended with great success, only when inflammatory action is present, although it even then requires the aid of other means to effect a cure, as, after a certain degree of amendment, the case remains stationary. Mercurial inunction, carried to salivation, is equally useful as the calomel. When no inflammation of the part exists, the mercurial ointment, applied by topical friction, is an excellent solvent—but, when inflammation does exist, it must be applied in thick layers, to remain in contact with the part, as recommended by M. Serres, when it acts as an antiphlogistic and not, as in the case of friction, as a stimulant to absorption. All friction with iodine ointments must be foregone as long as any inflammation exists. The ioduret of lead is the best preparation, but any that may be used requires watching, lest excitement to an injurious extent be produced. He has found iodine, and especially the hydriodate of potash, given internally, very useful—particularly in scrofulous cases.

Blistering must not be employed when even sub-inflammation is present, being as it is essentially stimulant. If blisters are placed *upon* the tumour itself, when the skin is indurated or adherent, acute inflammation of a most obstinate character will be produced, and which would have been avoided by placing them in the vicinity of the part. When the blister occasions an injurious degree of inflammation, we must meet this with leeches, &c. We must judge of the ultimate effects they are likely to produce by the degree of irritatation that results.

The application of the *moxa* follows the same rules as the use of blistering; and its repetition has been found useful in some cases, wherein amputation was imminently threatened. When a repetition is likely to be required, the moxa must be of only a small size—somewhat less than a shilling.

The *seton* is the most exciting of all exutories, and must not be employed until the inflammatory action has subsided. It should not be passed through the substance of the engorgement, but on one side of it. It is only to be employed when all other excitants have failed.

There are cases of white-swelling, which after proceeding well on towards a cure, remain, at length, quite stationary, treat them how we will. In these we must abandon all active measures, contenting ourselves with hygienic precautions; and, sometimes in a few weeks, we may find the swelling much dissipated, and, even if still persistent, the various therapeutical agents will usually be resumed with much greater advantage, after such an interval.

M. Lisfranc states that, in his hands, the *muriate of barytes*, given in large doses, has been found very successful, the patient being also during its use confined to a vegetable diet, and water drink—upon which, however, he often gains both flesh and strength. He begins with six grains, and reaches, in some cases, as high as forty-eight grains per diem; while, at Marseilles, and in Italy, two drachms have been given in the same period. He alludes to many cases, in which the employment of this medicine has saved limbs, that must otherwise have been removed by amputation.

When the white-swelling dates from a *rheumatic* origin, it has been recommended to place an irritant, such as a blister, upon the joint itself. This practice is attended with the danger of fixing the locality of the inflammatory action; and M. Lisfranc prefers, in the case of the knee-joint, *e. g.* placing the blister at the upper and outer part of the thigh; and in following this practice he has met with great success. In some of these cases, the pain, which is so distressing, has disappeared under salivation, as if by enchantment.

After a cure the joint is not at once enabled to resume its functions. The patient has remained at rest during a long space of time, and pain attends his first movements. If this ceases in a quarter or half an hour, after attempting to walk, &c. we conclude it has been produced by mere desuetude; but supposing it is continuous, the patient must not yet abandon repose, and the various remedial means he has been employing.

Relapses were formerly very frequent, but M. Lisfranc has found them to be rare, since he has given his patients a padded knee-cap to wear,

This limits the movement of the joint, and supports it during their performance, prevents any stagnation of the fluids, and aids the resorption of any effusion that may occur. Atrophy of the joint sometimes follows, which may be persistent, or may disappear, as the general health improves.

Many cases are quoted to demonstrate amply the author's mode of treatment, concerning which he thus remarks:

"I am frequently asked by what plan I cure white-swellings: but these words offend my ear. I reply, that my method is dictated according to the various indications the cases present; and that under many circumstances, in order to obtain a cure, we are not only obliged to employ a great number of means simultaneously, but frequently to exhaust, as it were, all we possess. The disease may pass frequently from the acute to the chronic condition, and, in the majority of cases, the means which have at first produced great amendment, after a while, do not continue to do so, and require to be replaced by others. These are the principles which I shall again and again illustrate in the course of this work, for I feel the indispensable necessity of establishing them." 610.

XXVII. NON-VENEREAL EXOSTOSIS.

Scrofula, gout, rheumatism, scorbutus, and cancer, may give rise to this affection.

External violence is usually supposed to be a mere exciting cause of the development, and local fixation of some inherent virus; but M. Lisfranc has so frequently seen contusions, &c., followed by the production of exostosis in persons in whom no such condition of the constitution existed, that he does not believe this view of their origin is a correct one.

Must we necessarily sacrifice a bone, because a tumour of suspicious character is situated upon it—provided such bone be not affected by necrosis or caries, or be not preternaturally softened? Experience proves that, in the majority of cases, the increase of its size is due to a mere increase of its nutrition, occasioned by the irritative presence of the tumour—and that, after the removal of the latter, the exostosis usually remains stationary, or disappears more or less completely. Exostosis may or may not be accompanied by inflammation of the osseous tissue; and the recollection that there are two opposite classes of cases, is highly necessary in a therapeutical point of view. The means to be employed resemble those proper for white-swelling; but, in the present cases, the reproduction of the inflammatory action is infinitely more easy and more frequent.

Exostoses are often developed after apparently slight bruises, to which a requisite degree of rest and attention has been denied. Such injuries require the prompt and effective application of leeches, cataplasms, &c.

Several illustrative cases are cited.

We have left unnoticed two chapters: the one upon Furunculus, and the other upon General Rules for performing the various Disarticulations. The former contains nothing worthy of note, while the latter is too long for extract, and yet too condensed for abbreviation. With the exception of these portions, we have endeavoured to present our readers with a faith-

ful transcript of M. Lisfranc's opinions. Many of these are original, many of questionable correctness, and all of importance, seeing the influence he exerts upon continental surgery—an influence, we are happy to say, likely, in the main, to lead to its great improvement. It is gratifying, also, to find one who has achieved so high a reputation as an operator, continually protesting against hastily having recourse to operations; and again and again declaring, that the highest province of surgery consists in avoiding rather than in performing them. "If," says he, "surgery is beautiful when she operates, she is infinitely more brilliant when she effects a cure without depriving the patient of any of his limbs—without plunging her scalpel into his quivering flesh—without causing the flow of his vital fluid." May this sentiment, avowed as it also is by so many of our own most celebrated surgeons, have its due effect in repressing that recurrence to rash and useless operations, which we fear is prevalent among some members of the profession even at the present time!

We are well pleased also to find our author strongly insisting upon another distinguishing feature of scientific surgery—its intimate union with medicine, indeed their indivisibility. But, truly, the multiplicity of operations can alone be prevented by such union, for the mere chirurgeon (we should hold such a one to his etymology*) never having become acquainted with the resources of nature and art, can never avail himself of them, and unable to unravel the Gordian-knot, must content himself with severing it.

We cannot equally compliment our author upon his style, which is wordy, diffuse, and slovenly—so that all his precepts might have been compressed into a much smaller space, and expressed with a much greater clearness. There is, throughout the work, also, a continual querulousness. By his own account, M. Lisfranc is the most injured man living, for scarcely is there one of his various plans of treatment, but has been appropriated or misrepresented by others. Nothing short of a surgical autocracy we fear will satisfy him.

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* χειρ manus, and εργον opus—literally, handicraft.

I. Remarks on the Constitution of the Medical Department of the British Army, with a Detail of Hospital Management, and an Appendix. By *Robert Jackson*, M. D. London, 1803.

II. A System of Arrangement and Discipline. For the Medical Department of Armies. By *Robert Jackson*, M. D. London, 1805.

III. Fifth Report of the Commissioners of Military Enquiry—Army Medical Department. Ordered to be Printed, 26th January, 1808.

IV. Notes on the Present Condition of the Medical Department of the Indian Army. By *J. R. Martin*, Esq. Surgeon on the Bengal Establishment.

In placing the titles of the above works as a heading to our present article, we do not by any means intend to give either a review or an analysis of their contents. What we propose is, to place before our readers a rapid sketch of the Administrative History of the British Army Medical Department, as well as of that of the Indian Army; noting the causes that brought about their respective improvements. We think such an exposé, however brief, will prove an useful record; for it is only by an acquaintance with preceding errors that we can effectually apply their preventives, and obviate their results.

Who is there that considers the vast debts due by the science of medicine and surgery to the medical officers of our fleets and armies, that will deny to this subject a paramount importance? Who is there that regards the fame and usefulness of men like Pringle, Blane, Robert Jackson, Macgrigor, Fergusson, Hennen, Guthrie, Marshall, and many others, and reflects on the benefits they have conferred on medicine, surgery, and, above all, on the subjects of climate and the external causes of disease, that will refuse to the administrations of the medical departments of our fleets and armies their due importance, or allow themselves for a moment to view it as indifferent, whether men like Guthrie, after a career of the most brilliant success, shall be considered as "too young" for promotion, or a man of master-mind like Robert Jackson, shall be persecuted into retirement from the service, by corrupt or feeble administrators.

We consider it of the last importance that the Medical Departments of the Army and Navy should be well administered, not only on account of the interests of the public service, but for the sake of science all over the world. Is it of no consequence to the general welfare whether such men are to be elevated or depressed—whether they are to receive the just reward of their honourable exertions, or to be insulted and superseded by their inferiors? All we can say is, that such things, and even worse things, *have* occurred. We should be grieved indeed did we think it probable, or even possible, that they should ever occur again: but, without vainly diving into futurity, we will assure our naval and military brethren that,

their best preservatives from a repetition of the ills that have gone by, will be found in their own general intelligence, aided by a knowledge of the particular subject now under consideration; and last, though not least, by *union*.

The subject, however, is complex—"it comprehends a wide range of general and practical knowledge of military service, as well as a correct acquaintance with the history, causes, and consequences of the diseases to which troops are most liable, in the field or in quarters."

Such is the rough school* in which all must serve, who pretend, either as physicians or surgeons, to attend to the medical concerns of armies; or further, who pretend to administer the affairs of a department involving these concerns. There is no other channel of information—no other school than this; and it is now proved by sad and repeated experience that, where the "general and practical knowledge of military service," is wanting, there is no safety for the interests of the state, the welfare of the soldier, or the character of the medical establishments. We propose very briefly to show, first, how this came about in the British Army,—but before doing so we would remark, once for all, that we adhere to the recital of bare facts—avoiding comment or censure.

The actors in the scenes are gone:—many of them were respectable persons;—and, however careless and corrupt the system they administered, we believe the administrators to have been free from personal corruption.

From an early period till the year 1815, the affairs of the "Army Medical Department" in England were conducted by a Board consisting of three men. It never appears to have been considered necessary that these gentlemen should "at any period" have been "practically acquainted with the business" of their department:—yet by His Majesty's Warrant of 1798, when a reformation was instituted, the "Physician-General was to recommend the army physicians, and to give his opinion on all matters referred to him by the Commander-in-Chief, or Secretary at War; that he was to inspect the medicines provided for the use of the army by the Apothecary-General, and to join with the Surgeon-General in checking his bills; the Physician-General was also to certify his opinion in the

* "The surgeon of a regiment learns the duty of a soldier in addition to that of a doctor, and a military surgeon ought to know the one just as well as the other. I remember a village on the great plain of the Guadiani, near Merida, in which three regiments were quartered in the sickly season of Autumn, when fevers prevail. Three rows of hillocks marked the last resting-place of the dead on earth, and my attention was attracted by one row being much shorter than the other two. I found on inquiry, that the regiments were very much of the same strength, and quite under the same circumstances. The doctors were equally able; two were men entering rather on the middle period of life, the third was a very young man, and perhaps the worst doctor of the three: but the short row of tumuli belonged to him. I was very desirous of making this out, and after carefully visiting all the hospitals and quarters, I ascertained the reason. He was the better soldier, if not the best doctor. His hospitals were in better order, the material was more perfect, the labour bestowed on every part, except in physic, was greater, and five per cent. at least of human life was the saving and the result. I never saw it otherwise."—*Guthrie on the Diseases of the Peninsula.*

cases of officers applying for leave of absence on account of ill-health, if the cases were not surgical; and he was to preside at the medical examination of candidates for regimental and staff commissions.

The duties of the Surgeon-General were to recommend staff and regimental surgeons and assistants; to select from the staff surgeons on full pay at home such as may be wanted for the general hospitals, camps and districts in this kingdom; to make requisitions to the Inspector of regimental hospitals for apothecaries and hospital mates; and to appoint the inferior officers and attendants in the general hospitals. He was to correspond with the heads of hospitals abroad, and to be the channel of application for extending the leave of officers absent from such hospitals. He was to inspect the quality, and to regulate the prices of the surgical articles in the bills of the Apothecary-General, and, with the Inspector of regimental hospitals, to ascertain the claims for bounty or indemnification for loss of limbs and cure of wounds. He was further to certify in surgical cases, as the Physician-General was directed in medical cases; and he was to assist at medical examinations of hospital mates.

The third principal officer of the medical department, stated in His Majesty's Warrant, Inspector of Regimental Hospitals, was directed to recommend apothecaries, purveyors and deputy purveyors, hospital mates, and the inferior officers, on the formation of any new establishment.

He was to inspect the regimental hospitals at home, to correspond with the regimental surgeons at home, and to be responsible for all matters relating to the supply of their medicines, and the management of their hospitals. He was to act with the Surgeon-General relative to the claims of wounded officers, to certify in surgical cases, and to assist at the examination of hospital mates."—*Fifth Report.*

How a Physician-General who "never served in any army"—a Surgeon and Inspector-General, who never served but in the Guards, confined to London—all three being private practitioners in London—conducted the difficult and important duties above described, we shall now relate. The Regimental-Surgeons—the true physicians of an army—were proscribed "from the expectation of filling the physician's office, which was bestowed on hands of a high and privileged class, the physicians of the regular universities and associates of the College of Physicians of London," though almost as ignorant of the nature of army diseases as of the Welsh language, those of Oxford and Cambridge especially:—there existed an unparalleled, costly, and "unnecessary" proportion of officers, so that "two-thirds of the Medical Staff abroad during the last war were useless" (*Report*):—a wasteful, complicated, and injurious system of hospital management:—a defective plan of hospital record and return, affording no satisfactory or statistical result as to the nature of disease or the effect of treatment:—an unworthy use of patronage, granting commissions and responsible offices to persons "of inferior medical education," while the recommendation was in some cases with one member of the Board, and the responsibility for the conduct of the person recommended was with another member" (*Report*):—an assumption by one member of "very extensive patronage" belonging by His Majesty's Warrant to one or both the other members, "causing an unnecessary increase of many branches of the establishment, and a much greater expenditure than would otherwise

have been incurred" (*Report*):—the employment of persons "who, receiving the full pay and allowances of another office, did not execute those duties for which that pay and those allowances were given"—thus improperly "remunerating services of one kind by the pay and emoluments of a very different office" (*Report*):—the permitting, contrary to orders, of large cash balances remaining in the hands of the Treasurer and Agent for Army Hospitals" (*Report*):—an expensive and unnecessary addition to the Staff of Hospitals at home and abroad—an addition "scarcely justifiable" (*Report*):—the continuing "the same rank and pay" to purveyors when the rank "was no longer considered as a step of promotion in the medical line"—and when they had become "mere Storekeepers or Stewards" (*Report*):—the particular "incongruous appointment, at the discretion of the Surgeon-General," of persons denominated "*Principal Medical Officers*"—persons who might be raised from any rank to this station, even from "an Hospital Mate," and so as to "supersede in control all his former superiors" (*Report*):—the making "new appointments" at times when the Half-pay List could have furnished the requisite officers," and this contrary to "the rules laid down in His Majesty's Warrant" (*Report*):—the continuance of the "very disadvantageous" system of the "General Hospitals" after their fatal tendency on military health—their profuse expenditure of money, and injurious influence on the medical character had been demonstrated:—"the fixing of complete establishments for General Hospitals at places where there were no patients," in a manner "unknown at the War Office" (*Report*):—that "in consequence of the extension of the General Hospital system only" an enormous accumulation of surgical instruments, and loss of the public money took place, while, as to the medical stores of the army, which were often "very bad," "no public officer observed and took an account of the quantity and quality of the articles put into the packages," and it happened that it was only on their arrival at foreign stations that "deficiencies have been observed" (*Report*):—"great inattention in the assortment of the medicines sent abroad," although it was obvious "that, for troops going to different climates, or to be engaged in services of different descriptions, a difference in the kind of stores to be provided may be necessary" (*Report*):—the destruction of many public records that purported to complain of bad administration, a wasteful expenditure, bad medicines and bad instruments, the explanation being that "no trace of such Report can be found" (*Report*):—the destruction of valuable stores of medicines and instruments from bad packing, from which "the public has sustained a considerable loss,"—also great inconvenience from "the contents of the packages not corresponding with the invoice put up with them" (*Report*):—the permitting charges on account of Medical Stores, "40, 41, and nearly 60 per cent. higher" than the market prices of certain chemists and druggists of the day, although these latter "afforded something handsome in the way of profit;" while a charge was allowed in full sets of surgical instruments of "19 per cent." on portable sets of "40 per cent. and on screw tourniquets, of 50 per cent," above Mr. Evans's charge: "and these prices have been allowed (as it would seem without inquiry) by those whose duty it was to check the charge," causing thus *an expenditure of seven thousand pounds per annum on account of instruments alone*, and that at a time "when it is known that the Regimental

Surgeons always found their own instruments" (*Report*):—the establishment of "Depots" at places where they were not wanted, and the filling them with expensive stores, most of which were left to decay; at Porchester Depot alone there were "medicines sufficient for about 30,000 men, and Purveyor's stores for a much greater number;" while at the York Hospital Depot, there were 800 sets of capital instruments, with upwards of 1,300 full and small sets of pocket instruments, and at Porchester "300" more sets of "capital instruments" (*Report*);—the ordering of surgical instruments to the value of nearly eighteen thousand pounds in 1803, notwithstanding instruments to the value of eighteen thousand pounds were provided in 1801 and 1802, at the close of the last war;"—the result of the whole being that, "the annual expense of medicines in the navy had not amounted to above one-third of that of the army, although the naval hospitals were larger, and more numerous, than those belonging to the army, and the naval depots were as widely extended" (*Report*):—the absence of all check on the expenditure of "Hospital and Purveyor's Stores," though these last amounted to the enormous sum of "five hundred and eighty-five thousand pounds, or, on an average of thirteen years, to forty-five thousand pounds per annum"—thus exhibiting "the same inattention to economy in conducting the supply of these hospital stores, from time to time, as of the medicines and instruments" (*Report*):—the causing to be transported from London many articles to the "different depots, and from these subsequently to other depots, at a great expense, that could have been procured on the spot where they would be wanted; often, probably, at a much less prime cost, and always, of course, without the other expenses which we have before enumerated" (*Report*):—the total abandonment of the duty of control in regulating the quantity and prices of wine, spirits, and porter for the use of the army at home and abroad from 1793 to 1806, in a matter amounting to "forty-seven thousand, seven hundred and forty-nine pounds,"—the consumption in York Hospital alone being "a pipe of Port wine in ten days," the same rate of consumption being continued "for some time" (*Report*):—it arose from the general system then in force, "1st, that, owing to the variety of modes in which money was issued for the service of the department, its whole expense was never submitted in one view to the attention of the legislature: and, 2dly, that, owing to the variety of modes in which the different payments were controlled, no assistance was obtained for checking one species of expenditure by another, or of producing an uniformity and consistency in it" (*Report*).

We will not follow the "Report of the Commissioners of Military Enquiry" any farther, or enter into the details of individual misconduct, but conclude with the dictum of the Duke of Wellington, pronounced after a long and intimate acquaintance, and which proved the death-warrant of the London Board:—"Of the Medical Board I entertain the very worst opinion. I have proof that every promotion is a matter of application and intrigue." The parties referred to are long since gone; and, after the exhibition already afforded, we do not apprehend that we shall again hear of a Board in England to conduct or superintend the medical affairs of the army.

It will be seen that the quotations are made principally from the "*Report*," and in some few instances from the *works of* Dr. Robert Jackson, whose

titles are inserted at the head of this article; for we consider both to be equally authentic. The carefulness and entire trueness of Dr. Jackson's observations are now well known, and were duly appreciated by the members of the Commission, who adopted them, "because they had frequent opportunities of ascertaining the correctness of the facts stated in them, and also because many of the improvements which have lately been made in the army medical system appeared to them to have been suggested by Dr. Jackson" (*Report*). All this is quite true; and we should like to see the character and services of this most upright and able military physician recorded in a manner worthy of them.

The biography of Dr. Jackson is a desideratum in medical literature.

We should like to see also a manual for the guidance of the medical officers of the army, containing, in brief statistical form, an enumeration of the quantities and proportions of stores, establishment, &c., required for certain given numbers of troops in field and cantonment—likewise the probable number of sick per thousand of strength in certain climates. This latter information can now be obtained from the invaluable statistical Reports of Mr. Marshall and Major Tulloch.

Before concluding the subject of the former mode of managing the affairs of the Medical Department of the British Army, we would make a few observations on "the General Hospital System," which flourished systematically and especially under the Board, and was only overborne on the fall of the parent institution.

The destructive effects of general hospitals were early observed by our medical and military officers. "Among the chief causes of sickness and mortality in our army," says Pringle, "the reader will little expect that I should rank the hospitals themselves, though intended for its health and preservation, and that on account of the bad air and other inconveniences attending them." Dr. Robert Jackson is equally emphatic and more detailed in his account of their ill effects, and quotes the military of George the Second's time, who characterised this institution as "the destroyer of the army." The physical ills they produced by generating new diseases —tending to fatal relapses—counteracting recovery—causing delay in early treatment—and repressing the zeal of the Regimental Surgeons— were not surpassed by their moral ills, which went to destroy the best feelings of the man, and by consequence the best qualities of the soldier. In despite of former experience, however, general hospitals for the infantry were used in a large scale in Holland in 1794-95, and the mortality in them was excessive—ending in "dreadful destruction;" while the cavalry, which "traversed the same fields, and lived in the same air," but which carried its own sick, and treated them regimentally, "had little or no mortality in the whole course of its service." It was the same with some few corps of infantry that adopted the regimental plan of management. In the Parliamentary "Report," already so often referred to, the General Hospital System is described as "attended with most destructive consequences to the sick soldiers, and that it has produced expenditure and waste of every kind." Again:—we find, "the accumulated horrors of ill-arranged hospitals"—in other words, the terrible consequences of *hospital miasm*, deplored by the historian Alison. Treating of the Peninsular war, he says: "the military hospitals, charged sometimes with twenty *thousand sick* at a time, fostered contagion rather than cured disease,"

while the Government at home left its General no funds "to pay for hospital necessaries."—*Wellington's Despatches.* Let us hope, then, with Mr. Martin,* that we may "never again see the General Hospital System inflict our armies."

When, however, general hospitals must, of military necessity, be established, and for however short a time, their inmates should consist only of such sick and wounded men as cannot be removed; and crowding, above all things, ought to be avoided—the position, construction, and arrangement being, at the same time, of the most approved kind—the charge and control being conferred only on officers of the most approved and experienced character—in order that the various abuses, moral, medical, and financial, inherent in general hospitals, may be guarded against, so far as possible.

In conclusion, we will state that, previously to enlarging the accommodations of the Small-Pox Hospital in London, "erysipelas, typhus, malignant cynanches," and other formidable diseases were common: but "by spreading the same number of cases over double the extent of surface," these terrible consequences of crowding have been avoided. By those who have served so long as we have, it will not be said that we have dilated too much, or dwelt too long, on the medical management of armies. To them, "it is well known, that expeditions, apparently well concerted, have sometimes failed from sickness and mortality among the troops; and that campaigns, the plans of which seem to have been well laid, have had unsuccessful issue from the same cause. It is moreover true, that these effects have often arisen from defects in the original plan of medical arrangement, or from ignorance or inattention in the manner of execution."

But let not our readers suppose that they have yet done with us. There are still standing, or, we should more properly say, tottering, three Medical Boards in the East Indies, and we must just look back a little to the working *of their system*—first briefly adverting to the constitution of the Asiatic Boards. We are told by Mr. Martin, that they are strictly an institution of seniority:—that in Bengal at least, any man, no matter if he have been a manufacturer of indigo, silk, or salt-petre, or a holder of a civil or judicial office, may, by serving two years with a Sepoy battalion in cantonments in time of peace, render himself qualified, first for the office of "superintending surgeon," and then plump into a seat in "*The Board*:"—that "an individual of little worth, whether regarded as a medical officer or a gentleman, may now look upon it as certain that, provided he survives his contemporaries, he shall rise in due time, not only to the superior staff employs, but to the governing head of the service:"—that, notwithstanding "the principle of selection is paraded forth in the Regulations of the Service," there "have arisen, within the writer's recollection, not once, but frequently, the mere merchant, the confirmed gambler, and the exhausted tippler," so as to leave the rule of selection "a dead letter—a mere mockery:"—that "the members of the Board have, on an average, completed a period of forty years' service:—that they are necessarily superannuated, generally deficient in military expe-

* Johnson and Martin on Tropical Climates, page 572.

rience, and therefore cannot be expected to represent the feelings or the interests of the body of which the board is the nominal head:—that as members of a scientific corps, likewise, they represent an age gone by. "Under such a system," says Mr. Mangles of the Civil Service, "where every situation of pecuniary value is given upon a sort of tontine principles, as a bonus on longevity, and where, consequently, such situations are unattainable, out of turn, by the highest merit, and confer no distinction when attained; how is it possible that emulation, the mainspring of all useful and honourable exertion, should exist? How, again, is it possible that the three senior surgeons on the list should always be properly qualified to instruct, direct, and control the whole body of subordinate officers; how the next ten following names should always represent that number of efficient superintending surgeons? How would the affairs of the Revenue Department, to take an example out of many, be administered, if the Board were invariably composed of the three senior members of the service, and the ten next on the list had a claim of right to the commissionership?" This is unanswerable.

"Many of the evils of administration of affairs in general, in India," says Mr. Martin, "are traceable to a disposition to multiply checks so as in reality to cumber the executive machinery, thus casting the responsibility, not upon qualified individuals, but upon Boards. In the medical department, a Board, instituted for the transaction of public business, consists, like the former Boards of the British Army, of three persons of equal power and authority; and as it rarely happens that three men think exactly alike in every thing, so, counterpoises existing, counteraction arises—movement is jostled, embarrassed—and effect is feeble or erroneous:—in short, a Board so constituted presents us with the very symbol of *vis inertiæ*. Judging by an extensive observation of more than twenty years, I should say that, of all the modes of perplexing simplicity of operation, of weakening energy, of nullifying unity of purpose, of clogging public business, and of evading substantial responsibility, a Board is the most direct mode; but especially a Board constituted on the seniority principle. * * * Were it as true in nature, as unhappily it is the reverse, that the best men live the longest, still the system of rise by the muster-roll would be the very worst. Repressive of all emulation in youth and manhood, and deferring promotion till the verge of life, it leaves for the discharge of public duty no energy, moral or physical, in the possessors of high office. Such would be the law of nature in any climate; but it holds especially in tropical regions, wherein the course of life is notoriously precocious of old age."

We have now before us the composition of the London Board, and, at all events, the composition of the Medical Board of Bengal, if not of the other minor Presidencies. We have seen how the London Board administered the important and honourable trust placed in their hands by their Sovereign. In its composition it will rank, professionally, far indeed above any Indian Board; for, with exception to the able and distinguished Mr. Annesley, of Madras—the only trump ever turned up by the seniority system—and some few others of minor note, we are not acquainted with any Indian Medical officers of distinction who have lived to get out of a Board composed of men from sixty to seventy years of age. On the contrary, all the men whose names have reached our shores have been, comparatively young men; and so it ever will be—it is the course of *nature*. It must be so. Old men—old idle men especially—are behind us. ***It cannot be otherwise.***

Sir Clifton Wintringham, Mr. John Hunter, Mr. Gunning, Mr. Keate, Sir Lucas Pepys, Mr. Rush, Mr. Knight and others, were celebrated men in their day; but we have seen how very bad, how very bad even on the part of the honest and great John Hunter, was the administration of the medical concerns of the army. Let us now turn to the medical administration in the East Indies. But before we do so, let us at once acquit the Indian Boards of all negligence or abuse in the audit of the great public accounts, and of any attempt at abuse of patronage, favouritism, or partiality in its distribution. In this verdict of entire acquittal on these great and important heads, we are sure our readers will unanimously concur with us, when we assure them—that, in India, our statesmen and financiers were wiser than their confreres at home; for, in the East, it never once entered into the mind of man to trust a Medical Board of seniority with such important and responsible duties as were here handed over to it. To the benefits of this plea then, in all its latitude, the Indian Boards are freely and fully entitled. Let us now look to the manner in which, in Bengal at least, they discharged the duties actually entrusted to them. We need not dive into musty old volumes of bad regulations, bad print, and worse paper, beginning with the year 1777, to learn what the duties of medical administration in an army are. Every body knows that these duties comprise the promotion and encouragement by every means in our power of every measure calculated to contribute to the soldiers efficiency, comfort and welfare, as well as to promote the honour, interest, and just administration of the service immediately under control. Tried by these tests, and they are the only true ones, we anticipate that the Indian Boards must be found wanting. First, then, as to the comfort and welfare of the soldier. We have before us a printed document, prepared, as we are informed, in Calcutta, in 1839, by two medical officers of the Bengal Army, and who must therefore have been cognitive of the facts and circumstances they state;—indeed they continually refer to official documents.

In this printed paper it is stated that, in March, 1835, Mr. Martin, in his capacity of Presidency Surgeon, submitted to Government a detailed and extended plan for requiring from the medical officers of the three Presidencies of India and the dependencies to the Eastward, reports on the medical topography and statistics, of stations and cantonments with which each individual might, in the course of service, be best acquainted. This plan was referred by Government to the Medical Board, who reported on it in a manner to induce the Governor-General to believe they intended to "throw cold water on it." The plan, however, appeared to the Government to be good—so, in place of the hydropathic mode suggested by the Board, effect was given to the order for all India, *and that by a direct act of the Government, without further reference* to the heads of the Medical Department. "It will hardly be credited by the public or the profession in England that, when this plan came to be considered by the Medical Board of Bengal, it was attempted to be burked; the reasons urged by the Board (we quote their own words) being, that Mr. Martin's plan would seem to embrace a far wider range of investigation than is to be found recorded in the writings of Hamilton, Breton, Wade and others." The Board therefore found itself "compelled to confess itself less sanguine in anticipating a favourable result *from the zeal and industry* of our brethren;"—a new mode

this of eliciting the talents and energies of a whole service! But one word on the Board's *reasons* for clipping Mr. Martin's plan. "Hamilton wrote most ably, it is true, on political and statistical topography; Wade never wrote a line on any topographical subject whatever; and Breton but a detached report, in a periodical, of a particular district. For the reason, then, that Mr. Martin contemplated a course 'far wider' than the persons named, must we have it smothered in a wet blanket!

"In May, 1838, Mr. Martin, in continuation of his topographical plan, called the attention of the Medical Board to the importance of medical statistics, and particularly of that department of it termed hospital statistics, and the neglect of this latter in Bengal. Having explained at large the principles of what was required, he called the Board's attention to the condition of the General Hospital at the Presidency, (under the Board's immedate supervision) in which during the seventy years of its existence, tens of thousands of Europeans have been treated, yet not one table has been constructed from its records which throws the least ray of light on the numerous and important facts connected with the subjects of the influence of climate, of locality, of treatment, or indeed with the subject of hospital statistics in India; and he concluded by proposing the nomination of a committee of selected medical officers to inquire and report on this great question." But, continues the printed report—"If belief was staggered by the reception of his first proposition, it will scarcely be imagined that the one just stated was absolutely rejected! The Board, in its suicidal reply, after upholding the antiquated and useless forms of hospital returns now in use, and from which no statistical information can by any possibility be elicited, went on to maintain 'that the public interests will be most effectually promoted by every one attending carefully and zealously to the discharge of the duties entrusted to him.' This rebuke was bestowed on the proposer of the plan, at the very time when the functionary who concocted it was writing daily in the newspapers on the *Judicial System* of India, or dedicating immortal poetry to 'the people of Scotland.' Such was the juncture chosen to tell Mr. Martin that the Medical Staff of the army might drug their men ad libitum (croton oil for congestions, and salts for Sepoys;) but as for medical topography and statistics, they were in the Board's keeping. "Will it again be credited that the Medical Board, who threw cold water upon Mr. Martin's plans, have since taken up the subject themselves, after a fashion of their own, thus exhibiting less of consistency, singleness of purpose, and public spirit in the matter, than of anxiety to appropriate to themselves the amount of credit that may accrue from eliciting medico-topographical and medico-statistical results from different quarters; and reducing them to their proper place as elements of science."

But the Board *did* bring out their own fashion of a return; and here is the explanation it called forth:—"Note presented to the Governors of the Native Hospital of Calcutta, by Mr. Martin, Surgeon to the Institution, dated April 15th, 1839.

"1st. It may be well to observe, before entering on particulars, that, for the purpose of obtaining true statistical information in systematic form relating to military and other hospitals, it is everywhere necessary that there shall be different classes of tables—some elementary, others more and more complicated, until

the end of a term is reached, such as a year, when the whole is compressed into a final and comprehensive table, such as the annual one in use in Her Majesty's Military hospitals.

"2nd. The advantage of such organised plan is obvious; and without it, all the labour of constructing tables can only prove an insupportable labour to the compiler, for the reason that he is not cheered on by an interest in the subject, or by any prospect of ultimate utility.

"3rd. The accompanying formula transmitted by the Medical Board, contains, I regret to say, nothing from which any useful information whatever can be framed, and this opinion I know to be entertained by officers of the first rank and experience. In it are comprehended observations elementary and ultimate, all so blended together that, by no contrivance that I am acquainted with, can the true statistics of disease be obtained. Matters too, that ought to be recorded in the daily, weekly, monthly, quarterly, and annual returns, are here mixed up in one page, so as to confound all attempt at exploration * * * The opinions I here reluctantly, but respectfully, venture to express, are borne out by the admirable exposition of the system of hospital records in use, and which are altogether worthy our imitation, in Her Majesty's Service, as presented to the Municipal Committee, by the Inspector-General Macleod.

"4th. The nomenclature, also, of the Medical Board's formula will be found defective, as compared to that in use in Her Majesty's hospitals, a copy of which I subjoin:—again, invalidings, which never occur but once a year, are here introduced into a Monthly Return for European Hospitals, along with another calculation which is only used annually. * * * Many other objections might be adduced to the entire plan and construction of this formula, such as the first and last items in the table, and the errors found by the President of the Municipal Committee to belong to them: the item 'other diseases,' too, is highly objectionable in any report which aims at statistical accuracy. But I shall not further occupy the time of the Meeting, by noticing these matters; and I can assure the Governors, that nothing but a sense of duty to the Institution has caused me to submit the above remarks."

Here, then, we have exhibited the conduct of the Board in a manner not to be questioned. If it be alone through the cultivation of medical topography and statistics that we can arrive at an accurate knowledge of the influence of climate and of locality on military health—of the advantages of different modes of medical management—of accommodation,—of diet, clothing, occupation and mode of conducting duty, &c. &c. on the part of the soldier;—if, in short, these be the sole channels of inquiry into, with a view to ameliorate the moral or physical condition of the soldier, what are we to think of the Bengal Board's conduct? Was it promotive or obstructive of the measures proposed? Was it, to use the Board's own words, discharging the duties entrusted to them in the most effective manner for the public interests? We will allow our readers to answer this question.

We have no pleasure in passing censure, however merited; and we have purposely avoided comment throughout this article—choosing rather to let the public decide for itself.

It was in vain that Mr. Martin urged upon the Board the importance of the subject, in tropical climates especially, and the necessity there existed of entering upon it in a systematic form—urging, in support, the sentiments of the ablest men in England. The Board would not move. It was in vain that Dr. Bostock, and others of the first class of eminence in Europe, declared "the numerical method" to be "one of the greatest

improvements of modern science." The Board was deaf. Strange as this conduct will sound in European ears, Mr. Martin, in another place, has given us what we believe to be the real clue to its interpretation:—"We are, in India," he says, "continually kept in mind of that law of our nature, by which old men are disinclined from undertaking any thing, however excellent, of which they cannot be expected to see the end. Through the operation of climate, also, we have too often to lament the premature display of the contracting influences of age on the moral and physical constitution of man, to the prejudice, no less of public welfare than of private happiness." But, though the Board rejected Mr. Martin's plan for carrying out a measure of great prospective advantage to the State, because they could not be expected to see the end of it, they entered warmly into a measure of questionable utility it is true, but presently involving their own personal comfort.

From the Calcutta Newspapers of May, 1841.

"INSUBORDINATION AT THE MEDICAL BOARD."

"There is a somewhat novel state of things, regarding the Members of the Medical Board, at present under the consideration of the higher authorities, and which, immediately relating to the question of military uniform, involves the higher one of military authority. We shall relate one of several accounts, (not substantially varying,) which we believe to be the most correct.

"Not very long since, Mr. Sawers, the senior member, considered of a sudden that as there was a uniform for the Medical Staff, that uniform should be worn at all meetings of the Board, and he mentioned this desire to the other, or junior, members, Doctors Campbell and Smith, and said at the end of a fortnight (allowing that time for the uniforms to be prepared) they should appear accordingly. They, considering this as a proposition, rather than as an order, voted against it, and intimated to Mr. Sawers that his motion was negatived by the majority.

"He made no remark whatever upon this result, and such meetings as next ensued, were attended in the old way—plain cloth coat, or white jacket, according to the 'warm feelings' of the respective members—until the first meeting occurred after the expiration of the fortnight's law,—when, on Dr. Campbell's entering the office in a white jacket, Mr. Sawers, who was himself in undress uniform, ordered him to go home, and consider himself in arrest for disobedience of orders.

"Home he went accordingly, and there he has remained in arrest ever since, and charges have been sent in against him by Mr. Sawers, grounded on his recusancy. These charges are before Government and the Commander-in-Chief, and we understand it is not found an easy matter to decide how they should be dealth with."

Let us imagine three gentlemen, whose aggregate age may be taken at 200 years—that is, the senior of them being taken at 70, and the two juniors at 65, ordered, in defiance of age and the functions of the human skin, and under pain of military arrest, to carry on their deliberations clothed, under a temperature of 93°, and in the rainy season in Bengal, in uniforms of scarlet woollen cloth, bound in ominous black velvet—the whole surmounted by huge cocked hats and black feathers. Sitting in this fashion of military undertakers, let us imagine their sufferings, which caused a delicate West India lady, decked out in gauze muslins, to com-

pare her condition to "the feel, as if she had been bathing in a boiler of syrup." Those alone who survived the agonies of the "Black Hole," could duly estimate the perils attending such a mode of deliberation.

But we must now leave the Board enveloped in its own vapour, and turn to the manner in which "the honour, interest, and just administration of the service immediately under control," have been looked to. As to honours and honorary distinctions, they are soon disposed of. There are no such things in the Medical Departments of India; and while nearly sixty officers of the Bengal army alone, are distinguished by honorary insignia, not one of the medical officers who served in the same ranks, and incurred more than their share of risk from various contingencies, has been so marked out. It is now statistically proved that the average mortality of the medical officers all over India is greater than that of the infantry branch even; and the Burmese and Affghan wars, not to speak of the earlier campaigns of India, attest the increased casualties consequent on active military service. As to the interests of the department—a very cursory inspection of Mr. Martin's "Notes," will prove that neither these nor the just administration have been in the least degree regarded by the constituted heads of the service.

"During the last sixty years, the formation, discipline and economy of the Indian army have been variously and advantageously modelled upon those improvements, the suggestions of experience which have been adopted in the Royal Service: whereas the Indian Medical Department, and integral part of the army, has, by a strange oversight, been left just where that of Her Majesty's Service was in 1780:—in other words, it has remained stationary during these sixty years; and, up to this hour, it is deemed to have no claim to any other mark of distinction than is included in the mere routine promotion by seniority;—in fact, the stagnation of this anomalous principle weighs upon it with peculiar and deadening effect, especially in Bengal, where promotion is so far more slow than in the other Presidencies. The great body of the service—debarred by legitimate expectation, and hope of rise or distinction, beyond such as belongs to a name borne so many years on the muster-roll—rather than to a character for knowledge, activity, and discernment—droops and stagnates, so as, after a time to lose that salutary zeal which prompts to those exertions that in all other services, secure a just and honourable reward. Disadvantages press on every grade of the service:—they comprise exclusion from the honours and privileges attached to military advancement—a low military rank—a too low rate of retiring pension, as well as the want of a greater number of grades; in short, the entire service demands a remodelling, to keep pace with the general improvement of the Indian Army, and to assimilate it to the Medical Department of her Majesty's Army."

Now to the proof—

"There are but four grades in the Company's Service, viz. the assistant-surgeon ranking with a lieutenant—the surgeon with a captain—the superintending surgeon with a lieutenant-colonel—and the member of the Medical Board with a colonel. We have no grade equivalent to that of major—a subject of complaint for many years, on account of its manifest injustice in a variety of ways. * * * In the present condition of the Indian Medical Department—deprived of grades and honours—an officer, when he has attained the rank of surgeon, may consider that, for the next twenty years, he has nothing further to hope, and that promotion will reach him only with superannuation."

Again—

"On attaining the long-envied rank of superintending-surgeon, the incumbent must serve two years before he can lay claim to the pension of his rank; whereas the military officer has only to be Gazetted to possess his right of pension for life from the date of such Gazetting. This is considered a peculiar hardship in the medical service, and with justice it is believed, seeing that, at present, the ten senior surgeons on the Bengal list are of thirty years' service, or upwards, and who, according to existing rules, are entitled to no higher rank or pension than that of captain, viz, £191. per annum.

"In the Royal Army the rate of pay progresses according to the date of standing in the service, and, by its pension rules, twenty years passed in the East Indies are equivalent to thirty in the other British dominions."

Here then we have exhibited a state of things in a very humiliating contrast with that which has long held in Her Majesty's Service. Now for a contrast of the manner in which the interests of the Medical Services of India have been attended to, as compared to those of the Indian Army.

"Let the following facts speak for themselves:—a captain retires after completing twenty-four years actual service in India, on major's pension, or £292; a captain of twenty-eight years service, on lieutenant-colonel's pension, or £365; —a captain of thirty-two years service, on colonel's pension, or, £456:—while a surgeon of twenty-four, twenty-eight, and thirty-two years has yet but a pension of £191 for a service solely in a tropical climate; and we have now, in Bengal, surgeons of thirty-three years' standing unpromoted. Again:—one-third of the colonels of the army have regiments, affording a competency for life; and of 191 lieutenant-colonels and majors, one in two is in the receipt of extra-regimental allowances for command of corps. Of the field officers besides, fifty-six, or one in five, have staff situations with handsome salaries; and of the captains, 159, or one in three, hold similar advantages; while 389 lieutenants, or one in two and-a-half, hold staff offices. In addition to all these advantages, the officers of the army have the privilege of purchasing out seniors to an unlimited extent.

"Now, of 106 surgeons in Bengal, only ten hold Staff appointments with allowances above regimental surgeons; and of 244 Assistant Surgeons, 14, or 1 in 18 only, have the same advantage, while in the army of the same presidency, one officer in six holds field rank—and only one surgeon in twenty-six stands in corresponding position. The comparative disadvantages under which we labour," concludes Mr. Martin, "are as numerous as they are impolitic in themselves and humiliating to our service."

This is quite true: and now let us ask, how it was that, during these sixty years of neglect and abuse of every kind, the constituted heads of the Indian Medical Department remained silent and inactive? How has it come about, also, to quote the Lancet, that "not one of the many wealthy old men whom the Indian Medical Service has sent home, has had the good feeling, or knowledge enough of the subject, to bring the condition of his brethren, whom he left behind, to public notice?" We leave the Boards to answer these questions. We know that, to the several memorials recently sent home, we had, as in duty bound, a seniority catalogue of names duly registered according to the muster-roll, and beginning with the first three names in the list, these by the next ten, and so on: but what became of

these said memorials? Who read them? What respect or consideration did they meet with on the score of the seniority list of signatures? Was any thing ever done that they petitioned for? We again leave the Board to answer. When men who had passed their lives in idleness, neglect, or in absorbing non-professional pursuits, rose to the administrative heads of the medical department of the army, when and where did we hear of remonstrances from the Boards.

When the mere merchant, the confirmed gambler, and the exhausted tippler got into a Board, who ever proposed to turn him out? When the whole body of the service laboured under the most shameful neglect, disability and injustice, what Board in its corporate capacity ever stepped forward to its aid? To all these questions we should like to have an answer. When measures calculated for the good of the state, the soldier and the service at large were proposed in the most respectful manner, what was the conduct of the Bengal Board? The public can now answer to these matters. When, in an official Report, published by order of Parliament, it was stated that the mode of "Return" in use in the Indian army was defective in every essential information and object tending to promote the health and efficiency of the soldier, did the Boards take measures to correct the important error complained of; and lastly:—When it was proposed, because of this neglect, to supersede and injure most materially the whole body of medical officers of India, did the Boards take any and what steps to support the honour and assert the rights of those under their immediate control?—Again we leave the Boards to answer.

Doubtless many of the evils here enumerated are inherent in that worst of institutions—a seniority promotion—and come back upon us by a sort of "natural retribution" from its long continuance: but, though we may therefore be disposed to pass a less severe sentence on the actors, we thus only acquire the more just claim to condemn and put down the ruinous and iniquitous system.

It is something glorious, says the Lancet, "to strike, as Mr. Martin has done, a death-blow at this vile 'system.' We will venture to say that it is something very useful: and if Mr. Martin should live twenty years longer (by which time we believe he would, by the rule of the muster-roll, be entitled to a seat in the Bengal Board) we are well convinced he will have no objection to stand by the test of comparison in utility with any stickler (if any should then be found alive) for the rule of absolute rise by seniority. All public men and public measures will be tried by the results—as Napoleon has well expressed it—the rigorous law of history. To the result then we may with safety appeal; and while all other matters are taking the course which justice and the spirit of the age prescribe, let our Indian brethren enjoy the substantive goods procured them, in the shape of pensions, by Mr. Martin's exertions: for now, unpromoted surgeons will receive £300, £350, £500 and £700—no one of whom formerly had but £191 per annum. This is 'something very useful,' we trust; and the rest will follow in due time. Meanwhile, let the medical services of India consider well, after careful examination, what the medical department of an army ought to be —what it has been—and what it now is in the Royal Service, under the honest, able and judicious administration of one responsible head—'openly and solely responsible for his own acts.' Let them consider what this latter mode of administering the medical affairs of the British Army has done for the welfare of the soldier, the honour of the service, and the advancement of science. When our brethren have well considered these matters, we have no doubt how

they will act. No where does there exist a more able body of officers, taken as a whole, than in the Indian medical departments—and no where have medical men more varied or more extensive opportunities. That more has not hitherto been made of those opportunities is solely the fault of administration—of a false position. 'The medical service of India,' says Mr. Martin, 'claims the consideration of authority, on the score of its skill, labour, and activity, which have never been confined to mere recognition of professional duty, but extended to the developing the resources of the empire at large, and to the moral improvement of its vast population. In these respects no class of the Company's servants has a higher claim to the consideration of the ruling power.' Again, he says truly—'the talent is ample, but the prize for exertion has never been held forth.'"

With one more recommendation from their brother-officer, we conclude:—"*let them observe and record in early life.*" This rule, though opposed to the principle of the seniority system, they will find to their best advantage. It comes from one who has served "long enough to know, why the soldiers of the Tenth Legion were attached to Cæsar;" and what, perhaps, is more to the present purpose, how, by a just regard to the interests of the soldiers of the nineteenth century, we may secure at once attachment from them—advantage to our country, and honour to ourselves.

Postscript.—We beg leave to say a parting word or two on military ranks and honours.

Amongst our brethren of the army and navy, we know that, on the question of their right to both ranks and honours, there exists but one opinion; and this opinion rests on grounds of the most unquestioned justice. Robert Jackson says that, "as the medical staff shares in the fatigues and dangers of war, in just reason it is entitled to a share of advantages;"* and so thought and acted Napoleon—"Napoleon, the greatest man of whom history makes mention—Napoleon, the most wonderful commander, the most sagacious politician, the most profound statesman," was glad to place his best military surgeons in the same class of the Legion of Honour with his best generals. How would he have acted towards a man like Guthrie (to take an example out of many?) Would he have allowed such a man to remain undecorated? Would he have considered his claims to military rank and honour inferior to those of a man like General Dupont? Would he have considered him as less worthy of distinction than a captain of a gun-brig, or a lieutenant-colonel? Would he have permitted some of the most ordinary common-minded men that walk the earth, whether considered as soldiers or citizens, to be oppressed and overwhelmed with decorations, while a man like Guthrie stood forth undecorated? He would have done none of these things. It may be

* "It is quite impossible for a regimental surgeon to be out of fire, if he does his duty: and a medical staff officer can scarcely be out of the way of cannon-shot. The doctors are, therefore, very unjustly treated in being classed with clergymen, and commissaries. They do not actually fight, it is true, but I will venture to say, that the surgeons of the Fusilier Brigade in Spain, have been under more fire, take it all in all, than a large proportion of the general officers of the army."—*Guthrie's Lectures.*

well that on such a subject, however, we have the French Emperor's own reasons:—"In the council held to frame the code Napoleon, it was proposed by Count Mathieu Dumas, that the order of the Legion of Honour should be confined to military men."

"Such ideas," said Napoleon, "might be well adapted to the feudal ages, when the chevaliers combated each other man to man, and the bulk of the nation was in a state of slavery; but when the military system changed, masses of infantry and phalanxes, constructed after the Macedonian model, were introduced, and after that, it was not individual prowess, but science and skill, which determined the fate of nations.

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What is it now which constitutes a great general? It is not the mere strength of a man six feet high, but the *coup-d'œil*, the habit of foresight, the power of thought and calculation; in a word, civil qualities, not such as we find in a lawyer, but such as are founded on a knowledge of human nature, and are suited to the government of armies. The general, who can now achieve great things, is he who is possessed of shining civil qualities; it is the perception of the strength of his talents which makes the soldiers obey him. * * * * We must not reason from ages of barbarity to these times. France consists of 30,000,000 of men, united by intelligence, property, and commerce. Three or four hundred thousand soldiers are nothing in such a mass; not only does the general preserve his ascendancy over his soldiers, by civil qualities, but, when his command ceases, he becomes merely a private individual. The soldiers themselves are but the children of citizens. The tendency of military men is to carry every thing by force; the enlightened civilian, on the other hand, elevates his views to the perception of the general good. The first would rule only by despotic authority, the last, subject every thing to the test of discussion, truth and reason. I have no hesitation, therefore, in saying that, if a preference was to be awarded to one or the other, it belongs to the civilian. If you divide society into soldiers and citizens, you establish two orders in what should be one nation. If you confine honours to military men, you do what is still worse, for you sink the people into nothing."

"Moved by these profound observations," says Alison,* "the council agreed that the proposed honours should be extended indiscriminately, to civil and military distinctions." "While, up to this day." continues Mr. Martin, "the government of England considers such as the Earl of Chatham, Generals Whitelock and Prevost, more deserving of military honours, than men like Pringle, Blane, Robert Jackson, Macgrigor, Guthrie, Burnett, James Johnson, William Fergusson, Hennen, and a host of distinguished officers, who have encountered every kind of danger, in all climates and situations, and who have conferred incalculable benefits on the fleets and armies of England, as well as on mankind at large."

Theoretically, England would be ashamed to admit—practically, in free and commercial England, no one would dare to avow—"the influence of the mustache on the reason, and the necessity of the sabre in Govern-

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* History of Europe.

ment:"—yet does she, in respect to many of her most meritorious servants, act in a manner less just, less prudent, and less liberal than did Imperial France—nay, than does at this moment any European government with which we are acquainted. It may be very true that, morally, men like Guthrie, stand forth well distinguished in the simple attire of a citizen, along side of blazoned heroes like Sackville, Chatham, Murray, Prevost, and others, whom we could count by the score. But this kind of distinction is not the one under consideration; it is one too lofty for Governments;—it is not attained by the wearing a badge. What we contend for is justice; and for the Government of England to be just and liberal in this matter, is most easy. It would cost nothing in money:—it would set aside unjust and humiliating distinctions. All this it would do, and nothing else.

MATERIA MEDICA AND THERAPEUTICS.

I. MANUAL OF GENERAL THERAPEUTICS. By *D. Spillan*, M.D. A.M. 12mo. First Edition, 1841.

II. ELEMENTS OF MATERIA MEDICA AND PHARMACY. By *O'Brien Bellingham*, M.D. 8vo. Part I. 1841.

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IV. ELEMENTS OF MATERIA MEDICA AND THERAPEUTICS. By *Jonathan Pereira*, M.D., F.R.S. L.S. Two vols. Thick 8vo. Second Edition, 1842.

1. A MANUAL OF GENERAL THERAPEUTICS.

WE have much pleasure in introducing to our readers a very useful little work on General Therapeutics—on the *general* actions, physiological and therapeutical, of medicinal agents. In works on Materia Medica, we usually have an Introduction on the "*General Actions of Medicines*;" and if the therapeutical arrangement has been adopted, we have general remarks also, on each *class* of medicines; general remarks, for example, on purgatives; on narcotics, &c. Our readers then are to imagine these observations enlarged, brought together, and collected into one volume, and they will form a very tolerable idea of the work under consideration.

In the first Chapter the nature of therapeutics is defined, and the object of the author, in the present volume, set forth. "By Therapeutics is meant that department of Medical science which treats of the cure of palliation of disease." And although it must be confessed, that the treatment of disease is at times empirical, yet our author hopes that, as the

functions of life become more investigated, the action of medicines will become more understood, and the treatment more rational. Many preliminary sciences are necessarily known, before the study of therapeutics can be successfully pursued.

"Physiology observes man in the healthy state, and traces the laws according to which the several functions of the body are performed. Pathology directs attention to the causes which change the structure and derange the functions of the different organs, investigates the nature of such changes and derangements, and observes the phenomena accompanying them. The science of Therapeutics next comes in, and, guided by the knowledge previously derived from physiology and pathology, it establishes the various indications to be fulfilled, and determines the method necessary for restoring the system to its healthy state. The insufficiency of a knowledge of mere symptoms is now acknowledged on all hands. Diseases are now known to depend on lesions of certain tissues or organs. The modern therapeutist, directed by the lights of modern pathology, studies the nature, character, and product of these lesions, and considers the symptoms no farther than as enabling him to arrive at a knowledge of the seat of the pathological lesion producing them, and the structural alteration of which they are but the expression. The lesions, however, sought by the therapeutist, are not exactly those presented by the dead body; such lesions have reached their final termination, and have passed the limits within which the resources of medicine could effect any good. We must be aware, therefore, that in the lesions found in the dead body, many pathological elements have disappeared which kept up several of the symptoms, both direct and sympathetic, in the relief of which medical treatment may have been available. Death has now substituted icy coldness for those exaltations of temperature observable in several parts of the living body, and the cause of so much distress to the patient; paleness has now taken the place of inflammatory redness; where there was tension, there is now absolute laxity of parts. Several pathological phenomena observable on the living body, and which might have claimed the attention of the practitioner, and furnished him with useful indications, are now gone. Thus, then, it is not alone the lesions found on the dead body, but those also revealed by the symptoms, and accounted for by the laws of physiology and pathology, which the therapeutist should study, as it is these he is called on to treat." 4.

But the lesions, and all the symptoms which result from them, may be known, and yet the physician be far from a successful practitioner. It is the aggression of disease, and incipient functional disturbance that he has frequently to treat. He should be acquainted, consequently, with the power of remedies, with what they really can do, and also with the power which is justly attributable to the vis naturæ.

Dr. Spillan concludes this chapter, which is strictly introductory, with allusion to this vis naturæ.

"There has been observed in every living body, as well in the vegetable as in the animal kingdom, an instinctive principle, the constant tendency of which is to preserve the body in the healthy state by repelling the action of morbific causes, and to restore the same body, when injured by external violence, or by causes existing within itself, to its pristine state of health and vigour." "It is by the aid of this instinctive power or principle that we so frequently observe diseases removed without the intervention of art, or without even the slightest change being made in those external influences which may be supposed to have occasioned the disease; we often see diseases cured under the most opposite modes of treatment." "It constituted the *anima* of Stahl, the *archæus* of Van-

helmont; and though the moderns are not so much disposed as their predecessors to embody the refined abstractions of metaphysical philosophy, there is some reason for thinking that this same principle is still recognised in practical medicine, *mutato nomine*, under the new designation of *re-action*. 7.

Our author now expresses a caution against placing too much confidence in this vis medicatrix on the one hand, or being too disregardless of it on the other, and he concludes—

"Thus, when in acute disease we observe signs indicating salutary efforts, as, for instance, a displacement of the irritation to the kidneys, integuments, or to the intestinal canal, the judicious and experienced physician will at once see that he has nothing else to do but to favour these movements. If the symptoms of disease are slight, and the evil is likely to disappear spontaneously, we must, of course, abstain from active treatment—yet in such cases the physician is not really passive; he observes the phenomena as they present themselves, and modifies the animal organism by carefully directing and judiciously favouring the tendency, ascertained by him, to the re-establishment of health." 9.

CHAP. II.—We now proceed more particularly to our subject. We are writing on the treatment of disease. What then is an indication for treatment? Indications in disease for treatment are of several kinds; they occupy this and the next chapter. The indications of the present chapter are either *empirical*, *rational*, *fundamental*, *occasional*, or *symptomatic*. The term "fundamental," as applied to an indication, is new to us; we transcribe our author's exhibition of it.

"By fundamental indications, those are understood which are derived immediately from the exact knowledge of the nature, causes and course of the disease. For instance, a lady, of thirty-six years of age, suddenly meets a gentleman for whom she entertained a very ardent affection, and whom she had not seen for a very considerable time; the unexpected meeting produces a powerful effect on her, and causes a suppression of the menses, which happened to be flowing at the time. Some time after the shock, &c. she fainted; when visited by her physician on the next day, her pulse was full and frequent, her face was flushed, skin hot, every object in her chamber seemed of a red colour; her mind was a good deal disturbed, and violent spasmodic and convulsive movements were observed to occur: in this case the obvious and fundamental indication was to draw blood, which, being followed by sedatives, soon restored the patient to the healthy state." 12.

The others need no comment.

CHAP. III. contains the Therapeutic Indications derived from Disease. It is divided into two sections.

1st. Therapeutic signs derived from the morbid phenomena of the organs or systems of organic life.

2d. Therapeutic indications derived from the morbid phenomena of the organs of animal life.

Under the first head are the following—desire of food, thirst, vomiting, constipation, diarrhœa, defæcation, the pulse, respiration, fœtor of the breath, animal heat, sanguineous exhalations, urine.

These are stated clearly, and at some length; and their general value set forth, as well as their value in particular cases. Vomiting may serve as an instance.

"*Vomiting.*—When this is the sign of gastric irritation, of cancer of the stomach, or of strangulated hernia, we must of course avoid making the patient vomit, lest we aggravate his sufferings, and even occasion death.

"When, however, vomiting is the result of simple indigestion, unaccompanied by any previous irritation, it may be advisable to promote it by means of tepid water; diluent drinks, and strict attention to diet, are then sufficient to effect a cure.

"It may be stated that vomiting will possess a very different therapeutic value, when it depends on the diseases just now mentioned, and which all have their seat in the stomach, or on a disease of some remote viscus, such as the brain. It is almost unnecessary to remark that the quality of the substance vomited, as it frequently indicates the nature of the disease which occasions it, will often furnish correct diagnostic signs; it is obvious that the vomiting of blood and of simple alimentary substances admits not of the same mode of treatment.

"From the changes which occur in the functions of the intestinal tube, and in the quality of the fæces, some therapeutic indications may be derived; such signs, however, are of little value when unaccompanied by other signs." 23.

Under the second head, Dr. S. includes such indications as attitude of the body, œdema and anasarca of extremities, state of the skin, its colour, its dryness, the expression of the countenance, the character of the pupil, or depression of muscular power, peculiar alterations in the voice, as in maniacs, general sensibility of the body, as in hysteria, and lastly—*pain.*

With reference to pain, says our author:—

"The question presents itself, whether the pain which accompanies the great majority of diseases, and which presents in each a peculiar character, can be combated by particular means? Those practitioners whose leading theory it was that each individual symptom required to be met by a special remedy, and who in accordance with this theory, employed opium to relieve inflammatory pain, would answer this question in the affirmative. And though such a therapeutical principle is anything but sound, still every medical man knows that there are cases where he is obliged to regulate his conduct in conformity with it. Thus, in the case of violent pain, a special remedial agent may be directed to combat it; 1st, in the case where it constitutes the principal phenomenon of the disease, as in nervous pain; 2nd, when in chronic diseases the pain becomes very violent, and narcotics, employed internally and externally, cannot increase the principal disease. In other cases, however; it is the disease, of which the pain is but the companion, that we must combat.

"The nature also of the pain may render it necessary to modify the treatment. If the quality of the pain denotes the existence of suppuration, blood-letting must be suspended; which must again be resorted to, if the pain indicate sanguineous congestion, or acute inflammation. In a word, our curative agents must vary with the nature of the disease characterized by the pain. It is unnecessary to say that the pain of inflammation, nervous pain, the pain of rheumatism or of gout, that which depends on intestinal gases, or accumulated fæces, worms, &c. should not be treated after the same manner; another proof, if such were wanting, that all rational and judicious medical treatment must depend on the accuracy of our diagnosis." 38.

Dr. S. now mentions the *therapeutic indications* derived from the *morbid phenomena of the genital organs and functions*, referring especially to the female system. He shows the importance of regularity in the menstrual flux; and the various vicarious diseases which may depend on its suppression. He also alludes to menorrhagia and dysmenorrhœa, as symptoms

The *causes of disease* are next considered as therapeutical indications.

Thus *colic* may be produced by many causes; but if "a patient complains of severe colic, and we find that his occupation obliges him to continually handle lead, we are at once led from a knowledge of the cause to select the appropriate treatment."

The seat of the disease furnishes most important therapeutic indications. Dr. S. observes:—

"When the physician is called to a patient, his first duty is to discover what organ is the seat of disease. All his researches into the history of the case, all his investigations with respect to the disturbance of the functions, are solely to enable him to ascend to the knowledge of the parts primarily affected. We cannot have a just and complete idea of a disease, until, after having ascertained its nature and the mode of action of the causes which have excited it, we are able to trace the impression of these causes on one or more organs, and to determine the connection of the lesions and of the phenomena which have been successively developed. It is only then the physician can deduce the curative indications arising from such a state, and the most effectual treatment to be employed; for it is then only he is able to trace back in thought the various modifications which the organs must undergo in order to be restored to their healthy state.

"Without accurately knowing the parts affected, how should we apply the appropriate treatment to paralysis and convulsive affections, which are the effect of the primary or secondary irritations seated in the brain and its membranes? The fundamental basis of therapeutics, as well as of pathology, obviously consists in the knowledge of the seat and nature of diseases." 50.

The chapter is concluded with the indications drawn from the course, duration, and period of diseases.

"Every practical physician must be aware of the great influence which the periods or stages of disease should exercise on the choice and activity of the remedies to be employed. Thus we often witness the extraordinary good effects of blood-letting at the very commencement of inflammation; a remedial agent, which, though often necessary in the advanced stage of the disease, is never observed to produce such striking and almost marvellously good results as its onset. Again, when the inflammation has ended in suppuration, even though the fever may still continue very high, blood-letting is but rarely attended with advantage." 52.

Having thus shown the various indications of treatment, we are led naturally, in Chap. IV. to

CIRCUMSTANCES MODIFYING THESE INDICATIONS.

The age and sex much influence the indications for different remedies. A different treatment is required for the same disease, in persons of different professions, and with peculiar habits. The temperaments, also, of the patient must be taken into consideration, and any peculiar idiosyncracies. Further remarks on these points would be superfluous; we pass at once to the next, a very interesting chapter.

ON THE MODUS OPERANDI OF MEDICINES.

Dr. Spillan commences this chapter with noticing the general properties of medicines.

"Every medicinal substance possesses a peculiar power, which may be explained either by its physical or chemical qualities, and which is only developed a being incorporated with the living organism. When the medicinal substance nd organism come together, there occurs in the latter a series of changes and henomena which go by the name of medicinal action." 68.

These changes may be either local, or, what is termed, sympathetic. If ıe seeds of aconite be chewed, they produce a peculiar tingling of the ps and tongue—this is their local action. The serious symptoms which esult from swallowing many of these seeds, is sympathetic. This term ympathetic, is a bugbear term, a giant monster, which every reader of herapeutics dreads, at first sight. We are glad to find it fully discussed. The question now presents itself (says our author) how can a medicinal ubstance exert an influence on parts remote from the place of application? The common and very generally prevailing opinion is, that the nerves ransfer the local impression made by the action of the medicinal substance o remote parts and organs. According to this view, the remote actions of medicines are divided: 1, Into those which may be accounted for by he consensus of the nerves. 2, Into those actions which are occasioned y proximity of parts."

A local action in both cases is here made a requisite; and the secondary effect is induced by transmission of the primary action to distant parts of nervous communication, or the proximity of parts. Dr. S. conceives that some agents do act so. Purgatives for example. But the action of others he considers to be totally inexplicable on these grounds. "We may further satisfy ourselves that we can, for the most part, explain the remote effects only by admitting that a material action of the medicinal substance passes to remote organs from the point of application. But such a material action can only take place by the medicinal substances entering into the circulation."

Dr. S. now urges some objections to the theory of secondary action by nervous impression, and proceeds to the substantiation of the theory of absorption. He lays down the following fifteen rules for assuming the *entrance* of substances into the blood.

"1. If medicinal substances are found in the blood.

"2. If medicines are found in the secretions and excretions.

"3. If the substances employed are found deposited in the solid parts of the body.

"4. When, after the application of a medicinal substance, the effects of the same on remote organs do not follow till a late period, and in every case perceptibly later than the local effects. Action of narcotics is given as an instance.

"5. When, on the application of a medicinal substance, neither structural nor functional changes occur at the place of application, but on the contrary, considerable effects are produced on remote organs.

"6. When a medicinal substance, no matter how various the forms and ways in which it may be applied, always produce the same phenomena.

"7. When one and the same medicinal substance given in the same dose does not produce stronger remote effects proportioned to the importance of the organ to which it may be applied.

"8. When one and the same medicinal substance produces sometimes greater, sometimes less effects at the place of application, and when these do not produce corresponding remote effects; that is, when intense local effects are not fol-

lowed by equally intense phenomena in remote organs, but, on the contrary, the more intense the remote effects are, the less the local symptoms are found to be.

"9. When a medicinal substance, applied to a part or organ whose nervous connexion with the rest of the body is cut off, still exerts its influence on this, and with it also on the central parts of the nervous system.

"10. When the nervous communications continuing perfectly entire, but the circulation of the blood being cut off in a part of the body, a medicinal substance applied to this part produces no action on remote organs.

"11. When a medicinal substance, after local application to a wound, produces no action on remote organs, so long as its absorption is impeded by any means, but on the other hand acts, if nothing interferes with its absorption.

"12. When the activity of a medicinal substance is diminished, nay, perfectly destroyed, by an artificial plethora.

"13. When a substance applied to parts not furnished with nerves, yet produces effects in distant organs, even when locally, no change of structure whatever is observed.

"14. When medicinal substances introduced immediately into the blood act in just the same way as when they are taken internally, or exhibited in any other way.

"15. When a medicinal substance gradually disappears at the place of application, that is, is absorbed, and occasions in distant organs effects which correspond with the disappearance of the medicinal body." 83.

But, as Dr. Spillan continues to remark, *some* remote actions are without doubt attributable to local action and nervous conduction, as diffusible stimuli: and having just given instances in which remote actions were dependent on absorption, he now shows us others which are due to local action and nervous sympathy.

"We may," says Dr. S. "safely lay down the following rule:

"When a medicinal substance has produced considerable local changes of structure or function, sympathetic effects, to a greater or less extent, must also necessarily be produced in remote organs." 87.

And the question now is, to distinguish between the remote effects from absorption and those from nervous sympathy. The following limitations attend the operation of the latter cause; and the actions to which they are inapplicable must be considered due to absorption.

"1. When the remote action of a medicinal substance is a sympathetic one, this must correspond in strength with the local action."

"2. The remote action, in case the nerves are the means of conduction, becomes so much the more intense, the more important the organ is which is locally affected by the medicine."

"3. A sympathetic action, which would manifest itself in a remote organ, may be in part at least avoided, by cutting off the nervous connexion between the place to which the substance is applied, and the rest of the body."

"4. The remote effects occasioned by consensus of the nerves, and which are solely the consequence of the local medicinal action, follow always immediately after the local action, cannot take place without this, are not prevented by an artificial plethora, &c." 89.

Granted, then, that many medicinal substances do not produce their effects untill they have become mixed with the blood, the next point of inquiry is, how they "make their way into the torrent of the circulation." Dr. S. considers that they enter *principally* by the veins; by direct imbi-

bition through their coats. We can hardly curtail the following remarks:—

"Experiments the most satisfactory have proved that medicinal substances may be taken up into the circulation from the entire surface of the body, from the entire tract of the intestinal canal, from the mucous membranes of the air-passages, &c. &c. It is also known that the coats of the blood-vessels are pervious to medicinal substances; but whether these substances are taken up mediately through the lymphatic vessels, or immediately through the blood-vessels, and so brought into the blood, or whether they reach the circulation in both ways, is not so clearly made out.

"In determining this matter, it should be kept steadily in view that the question is, whether medicinal, and therefore heterogeneous, unassimilable substances, but not whether all, and therefore assimilable matters, are brought into the blood by the lymphatic vessels, or by the blood-vessels. It is certain that the latter (assimilable substances) are carried into the blood exclusively by the lymphatics, and that chyle has been but very rarely found in the veins of the intestinal canal. No inference, however, can be drawn from this regarding the relation subsisting between the absorbents and medicinal substances. From repeated experiments, instituted for the purpose of determining this question, the following inferences have been made. In support of the absorbing power of the blood-vessels, with respect to heterogeneous medicinal substances we have:—

"1. The observation that medicinal substances enter the blood on coming in contact with the parietes of the blood-vessels.

"2. In support of the absorbing power of the blood-vessels, and against that of the lymphatics, with respect to heterogeneous substances, we may adduce the more frequent occurrence of the latter in the blood, and their very rare appearance in the lymph and chyle.

"3. In support of the absorbing power of the blood-vessels, we have the experiment that absorption takes place in parts of the body which possess no absorbents.

"4. For the absorbing power of the blood-vessels, and against that of the lymphatics, we may adduce the rapidity with which certain substances enter the blood.

"Wherever a medicinal substance is applied, whether to the air-tubes and bronchi, or to the surface of the body, after they have penetrated the non-vascular epidermis, or epithelium, they meet with a fine, delicate network of blood-vessels, diffused over every part, which presents to medicinal substances a much greater surface than the lymphatic vessels do in any part. The probability that any considerable quantity of those substances is taken up by the absorbents, would accordingly be rendered extremely doubtful on these grounds; and still more so, if these vessels, as is not unlikely, have the power of absorbing only by their roots, but not of admitting such substances to pass through their coats.

"But supposing the parietes of those vessels were as pervious to medicinal substances as those of the blood-vessels, still the former will not only bring a much smaller quantity of them into the blood than the blood-vessels, because they present a smaller surface to the medicinal substance, but also on this account, because the fluid contained in them reaches the blood very tardily. It is not sufficient that medicinal substances should penetrate a vessel, but when they have entered it, it is necessary that they be carried on with rapidity, in order that they may act on the entire body. This property of rapid conveyance we know the blood-vessels possess. Thus Mayer found ferro-prussiate of potash in the blood two or three minutes after a solution of it was injected into the air-tube of an animal. Westrumb found iodine in the urine of a dog ten minutes after its internal exhibition. In the case of a boy with congenital prolapsus vesicæ. Stehberger, after administering internally madder and tincture of indigo, found

them in the urine after fifteen minutes, as also rhubarb and gallic acid after twenty minutes, by means of the colour and by re-agents.

"If we now compare this rapid passage of medicinal substances into the blood with the tardy course of the lymph and chyle, we will at once see that the former cannot reach the blood in this way." 92.

Having considered the way in which medicinal agents get into the blood, our author now proceeds to grapple with these all-important but difficult questions.

1. How the blood and medicinal agents re-act on each other, when they meet.

2. How the blood thus charged with the new substance re-acts on the nervous system by which the secondary effects are produced.

With reference to the first proposition—are they merely mixed or do they enter into chemical union with the blood? Probably both positions are true, though of different medicines. Thus, the volatile oils are only mixed; but if any one seeks for *mercury* in the blood, he will be obliged to decompose it entirely. It seems, like iron and sulphur, to be in a state of primary combination with the ultimate elements of the blood.

With reference to the 2nd proposition—Dr. Spillan says,—

"If we suppose a medicinal substance circulating in the blood, the first question which forces itself on us is, how does this act on the parietes of the vessels? Considering that medicinal action can take place only where there are nerves, we must conclude *à priori*, that in the larger trunks, and even in the smaller vessels, no medicinal actions go on, there being no nerves on the inner membrane of these vessels. Medicinal substances which enter the circulation can, therefore, only act there, where all change of substance and all reciprocal action between the solids and fluids take place, namely, in the capillary vascular system. But it is only the central parts and the peripheric terminations of the nervous system that are in the most intimate and multiplied contact with the capillary system." 98.

But this is rather the "*where*" than the "*how*" medicinal agents act on the nervous system. This "*how*," we think, cannot be understood until we thoroughly comprehend how the blood itself acts on the nervous system—how, in fact, the nervous energy is itself secreted.

The chapter is concluded with a consideration of what may be termed the *elective action of medicines*.

Dr. S. continues,—

"Though there are entire classes of medicines which influence all the organs with tolerable uniformity, still, on the other hand, it is not to be denied that the most important medicinal substances exert, if not their exclusive, at least their principal action on certain individual organs. Thus nux vomica exerts its chief action on the spinal chord, opium principally affects the brain, digitalis and tobacco the heart, cantharides the genital and urinary organs; in short, the most important medicinal substances act specifically on certain individual organs." 104.

It is certainly difficult to assign the cause of such results. Our author is of opinion, that the different organs have what he terms, "a special susceptibility for certain medicinal agents," and he supports this position by the following facts.

"1. Particular medicines occasion an increased afflux of blood in the organs

on which they chiefly exert their influence, and even excite in them structural changes." 105.

As an illustration of this position, Dr. S. quotes the experiments of Flourens on opium and belladonna. The latter acts, according to Flourens, on no part of the brain but the corpora quadrigemina, and consequently causes dilatation of the pupil. This *may* be true, but we call it in much question. Opium, according to Flourens, acts principally on the lobes of the brain; "an inference deduced from the observation, that after poisoning with opium those parts are always the seat of sanguineous effusion, the other parts of the brain being entirely unchanged." We cannot coincide with M. Flourens here; *any one*, we think, will admit, not only *cerebral* congestion as a result of poisoning by opium, but venous congestion universally.

"2. Medicines which act on particular organs are occasionally deposited in them."

"3. Medicines which promote certain secretions are excreted with them." 105.

The number of diuretic substances detected in the urine is adduced in proof of this last proposition. The processes of nutrition and secretion are considered to be analogous in the elective affinity of the different organs for the elements of which their secretions are composed. With reference to nutrition, Dr. Spillan observes,—

"It is certain that the proximate principles of the organs partly exist already in the blood; such as the fibrine, albumen, &c. These several substances, in contributing to nutrition, are not deposited accidentally here and there, but they are attracted by similar organic parts; thus fibrine is attracted by the muscles, albumen by the glands, &c. There is then, during the process of nutrition, a species of elective attraction between certain organs and certain substances contained in the blood, which bears at least some resemblance to the process that takes place when certain medicinal substances are deposited only in those organs on which they are destined more immediately to act." 107.

Also, with respect to the secretions.

"It has been proved that many of them are already present in the blood. Now we know that these are usually eliminated from the body, each by some particular secreting organ; a fact which can only be explained by admitting that these secretions already formed in the blood are more especially attracted by certain organs." 107.

The elimination of urea from the blood by the kidneys is a fair illustration; it is due to their elective attraction for that substance.

"As a further proof of such attraction, (he continues,) it has been ascertained to possess diuretic properties, whether taken internally, or injected into the veins. Vauquelin and Segalas, Fouquier and Laennec, have given it accordingly as a medicine. It is well known that the Arabians used the urine of the sheep and of the ass as a diuretic." 108.

Dr Spillan concludes thus:—

"All these phenomena are accounted for by considering that every organ with its nerves forms a more or less independent whole, possessing its own peculiar vitality and formation. All the organs must therefore manifest a different sensibility or impressibility towards external or relatively external stimuli, according

to its peculiar endowment. This is illustrated in the process of nutrition, and in the several secretions, as well as in the functions of the organs of sense, and the case is precisely the same with respect to substances circulating in the blood which produce different effects in different organs. 109.

We need only mention the subject of the next chapter. It is "the surfaces adapted for the application of medicines," and we pass at once to Chap. VII. "On the Effects of Medicinal Substances.

The *effects* of medicines are described by Dr. Spillan as primary and secondary, physiological and therapeutical. He thus distinguishes them.

"The action of a medicinal substance, taken in the proper dose, may be distinguished into two periods, or divided into two parts. 1st. Its contact with the organs of the body calls forth the development of its active power; the latter is instantaneously put forth, and certain changes in the state of the surface to which it is applied denote its power. In a little time—whether the molecules of the medicinal substance enter into the circulation, and are thus distributed over the system by the blood, or whether sympathetic communications transmit to other parts the impression first made on this surface—certain general effects are observed to supervene; the several organic tissues no longer continue in the same state, the several vital acts follow a different rhythm, all the organs take on another order of movements. These changes, occasioned by the direct impression of the medicament of the living parts of the body, constitute the first period of its action, and may be called its *immediate* or *physiological effects*. 2nd. Those changes in the actual state of the organs, those modifications in their movements, the new direction given to their vital functions, may effect some important result in a body morbidly affected; they may oppose, diminish and combat pathological lesions, and arrest their progress; they may excite organic efforts, which will prove salutary; the disease may abate in violence and intensity, and a marked improvement in the condition of the patient may be obtained. Such a result will constitute the second part of the effects of this medicine, and are generally called the *secondary* or *therapeutical* effects." 127.

Hence the secondary or therapeutical effect is consequent on the primary or physiological; and as the minute organization of all persons is somewhat different, the variable effect of remedies is accounted for.

Dr. S. observes very justly,—

"The immediate or primary effects of a medicine are always sure to take place, whenever such medicine is employed; if any difference should occur, it will be in degree, not in kind. Thus, an excitant will always stimulate tissues; purgatives will always irritate the intestinal surface; but the curative effects are not thus constant and uniform."

The *therapeutic* effects will depend on many contingent circumstances.

The subject of Chap. VIII. has almost been anticipated from the above conclusions. This chapter treats of the "*therapeutical action of medicines*." Dr. S. lays down and establishes the following proposition, that,—

"Medicines possess no special power distinct from their physiological action, and to which we can attribute the curative effects following their employment." 139.

We are now brought to the classification of remedies in Chap. IX.—a point of no small difficulty. Dr. S. mentions these methods—that of Barbier—Murray—and that of Dr. Billing.

Dr. Murray's therapeutical classification is well known. Dr. Billing

has proposed a classification of medicines founded on their physiological action. He makes but four great classes—*stimulants*, *sedatives*, *narcotics*, and *tonics*. But these are sweeping classes. For example, purgatives, emetics, nauseants, refrigerants, blood-letting, &c. &c. are all included under sedatives, for they all ultimately produce diminished action of the heart and arteries.

In the present work, Dr. Spillan offers no peculiar classification of his own. He observes,—

"In the classification which I shall adopt in this work, both in that part which treats of the physiological effects and therapeutical employment of the several classes of medicines, as also in the formulæ appended to the book, I shall endeavour, as far as I can, to preserve the spirit of Dr. Billing's arrangement; and, accordingly, whilst I adopt the four grand classes of narcotics, stimulants, sedatives, and tonics, I shall further present the therapeutical uses of the various subdivisions of medicinal agents, as found in the generality of works on Therapeutics." 152.

In the three remaining chapters Dr. S. enters fully into the history of the classes of medicines arranged according to their therapeutic action, —narcotics, stimulants, tonics, astringents, purgatives, emetics, diuretics, &c. &c. He defines each class according to their physiological effect; and shows how this effect is produced, which is always, in reality, by one of the four methods mentioned by Dr. Billing. He points out the organs more particularly affected by the secondary action of the different classes of medicines, the indications for their exhibitation, and lastly, their therapeutical application. We need only take one example. Under the head of stimulants, Dr. S. remarks :—

"Stimulants may be defined to be 'agents which increase the organic actions by impressing the contractility of the part to which they are applied, the stimulation so induced being extended, or not, to the rest of the system." 194.

"Most of the stimulating agents used in medicine are obtained from the vegetable kingdom; the stimulant property depending on the presence of an essential oil, or some similar principle; this oil is usually separated by distillation from the plant, as in the case of carraway, aniseed, lavender, &c.

"The *general effects* of stimulants are an exaltation of the functions of innervation, circulation, and calorification; thus the nervous susceptibility is very much augmented, the frequency and strength of the pulse are increased, and the animal heat is very much developed. These effects require a considerable dose of the stimulant. A smaller dose than is necessasy to produce this effect, may serve to stimulate the lining membrane of the stomach to a more copious secretion of its digestive fluid, and the muscular fibres to a greater activity, so that the processes of chymification and chylification may be facilitated and accelerated, and the various secretions and excretions may be more readily affected. Should the dose, however, be carried too far, irritation or even actual inflammation may be excited in the part with which the stimulant comes in contact, and a state of fever may be induced, whereby many of the functions above enumerated, especially the secretions and excretions, may be very much retarded." 195.

Their action on the digestive organs is first considered.

"*Digestive Organs.*

"*Physiological State.*—Stimulants act in two ways on the digestive organs. 1st. Immediately on being taken they stimulate the stomach and intestines, the

liver, pancreas, &c., by their local and direct action, as also the nervous centres so closely connected by sympathy with the gastric organ. 2nd. When the stimulating principles have been carried into the torrent of the circulation, and penetrate with the blood into all the organic tissues, they exert their stimulating powers on the stomach, intestines, &c.

"The influence of these substances on the digestive organs is very manifest when they are taken internally; a sudden developement of vitality takes place in the epigastric centre. A feeling of heat, referred by the individual to the stomach, indicates the species of effect which is then produced in this organ; the muscular coat of this viscus is made to contract, so that its cavity becomes diminished. Hence the functions of the stomach are aroused; if it be empty, a craving for food is observed to take place; if the individual be just after eating, the powers of the stomach are called forth, so that the food is elaborated with unusual rapidity. The same effects are produced in the intestines. The secretions of the liver are also promoted and increased by substances of this class."

"*Pathological State.*—When the parietes of the stomach and intestines are attenuated and atrophied, the effects of stimulants are, in general, less striking. Still, even in this case, they excite the languid appetite, facilitate and accelerate chylification, prevent the unpleasant symptoms which sometimes accompany digestion in such cases, and remove constipation. Where the stomach and intestines are hypertrophied, the power of stimulants is very great: they are then observed to render the appetite voracious beyond measure." 196.

Next comes their action on the circulating organs.

"Most stimulants exercise a powerful action on the heart. After their employment the blood contained in the coronary arteries stimulates its tissue and accelerates its action, the contractions of the organ become more frequent, and are performed with unusual energy, impressing more force on the column of blood which passes through the arteries. These canals also appear to participate in the effect of the stimulant; they yield a more tense and firm stroke under the finger. The increased frequency of the pulse under the influence of stimulants is a matter acknowledged on all hands." 199.

Their action on the organs of respiration, urination, and on the nervous system, are now fully noted, and lastly their therapeutieal employment, is fully discussed.

In addition to general therapeutics, this little work contains a very convenient table of the different poisons arranged under Dr. Christison's three great heads, of *Irritants*, *Narcotics*, and *Narcotico-acrids*, with their names, symptoms, and treatment.

Many useful hints also are to be found in the remarks appended on the "*Rules to be observed in Prescribing.*" Dr. S. shows the objects in view in prescribing—the objects in view in the combination of medicines, and points out the faults which frequently occur. He describes the different forms of medicines, the quantities they should contain, and concludes his work with a very large collection of prescriptions, arranged appropriately, according to their effects.

We have been much gratified with this little work. Our readers, we are sure, will derive much pleasure, and much useful information from its perusal.

II. ELEMENTS OF MATERIA MEDICA AND PHARMACY.

BEFORE reviewing the contents of the work before us we should be glad to be quite clear to whom to refer it; and, we must confess we are not a little perplexed on this point. We turn to the title-page and read,—Elements of Materia Medica and Pharmacy, by Dr. O'Brien Bellingham, edited by Dr. Mitchell. The problem appears solved at once. The work is Dr. Bellingham's and Dr. Mitchell has only the merit of editing it. But let us now turn to the Preface—the editor's preface we presume, and how read we? We now find that the present work is to be considered as the "*substance of Dr. Bellingham's lectures*" on materia medica. This materially alters our views of Dr. Mitchell's editorship; and we are now to consider that the bare classifications of Dr. Bellingham, delivered in his lectures, have been arranged and digested into the present volume, under the superintendence of Dr. Mitchell. The whole compilation, therefore, of the work is due to Dr. Mitchell, and Dr. Bellingham has only the merit of having suggested the best "*method of classifying*, and the *best method of treating* the *several subjects*."

The preface is short, and we shall transcribe it, in order that our readers may deduce, (if they can) the plan of Dr. Mitchell's work.

"*Preface.*—The Editor of these Elements of Materia Medica, and Pharmacy, (having been engaged for many years in teaching the different branches of medicine,) has frequently experienced the want of a work upon these subjects, which he could safely recommend to the student; not that there was any remarkable scarcity either of elaborate treatises, or of manuals of the materia medica; but a work was wanting, which, in filling up the deficiencies of the majority of compendiums, and manuals, should include everything of importance contained in the more elaborate treatises; should supply the omissions which occur in the latter: and without overloading the pages with unnecessary details upon the one hand, or distracting the attention by speculative, or theoretical opinions, upon the other; should contain everything really essential upon these subjects.

"This deficiency, the Editor has endeavoured to supply, having been familiar for several years, with the arrangement followed by Dr. Bellingham in his Lectures upon the Materia Medica; and with the manner in which the several subjects were treated; the former being superior to any classification with which he is acquainted; and the latter presenting some novelty, and appearing to possess some superiority over those generally adopted; he has undertaken the editing of the present work, (which contains the substance of these Lectures,) with the hope that in so doing, he is supplying a deficiency in medical literature, and in the expectation that he is conferring a substantial benefit upon the medical student."

Our readers will observe that the editor has no small task to perform. To produce a work, filling up all the deficiencies of former works, and yet containing no unnecessary details, and yet everything essential, requires, to say the least, considerable judgment. We have looked through the present work with great care, and we cannot compliment Dr. Mitchell in the attainment of these objects; we cannot think that the present work, unless considerably revised, will confer that substantial benefit on the medical student to which Dr. Mitchell aspires. But to enter a little into detail. Our readers (we hope) have found out from the preface the plan of the work. We can assure them we have been at not a little trouble to,

do so. We had anticipated *some* sort of arrangement of the materia medica to start with, but we have been disappointed. In the last chapter, indeed, which occupies eighty-five pages, Dr. Mitchell introduces enough *classifications:* there is list upon list of the materia medica; but before we get to this chapter, we cannot conceive what arrangement our editor is following The first two chapters contain the physico-chymical histories of the different *elementary* bodies, the compounds of which are found as officinal preparations, and we presume Dr. Mitchell only intends to give us their physico-chemical history without any reference to their pharmaceutical uses. For not a preparation of these elements is given. We are not finding fault with *these* details; but we would know in what they differ from similar details in works professedly written on chemistry.

Chapters 3, 4, 5, and 6, contain the chemical history of *compound substances* of which officinal preparations may be made—*e.g.* metallic oxides under which are included the acids and alkalies; also the general properties of salts; and the chemical history of the proximate principles of vegetables. These last occupy the two last chapters, and are arranged according to the classification of Dr. Thompson, viz. into 1, neutral vegetable principle—2, intermediate bodies—3, vegetable acids—4, vegetable alkalies.

These several compounds are treated with reference to their chemistry alone; we cannot see what particular object Dr. Mitchell has in treating these subjects without any reference whatever to their applications in pharmacy.

Chapter 7, is occupied with the general nature of pharmaceutical operations; and the several operations of pharmacy, viz. division, pulverization, trituration, levigation, sifting, elutriation, filtration and expression, are most minutely described.

Chapter 8, is a chapter of some length on pharmaceutical preparations, including a general view of the methods of their formation, with a list of all the different *tinctures*, *powders*, &c. contained in the different Pharmacopœias of Great Britain, under each head respectively. These lists, we need scarcely inform our readers, are found in the Pharmacopœias themselves, and we cannot help including them among several other, what we think, "*unnecessary details.*" The remarks above-mentioned, however, are premised by some observations on the methods of collecting, drying and preserving indigenous plants.

We are introduced in Chapter 9, to the modus operandi of medicines; and Chapters 10 and 11 contain the circumstances, such as age, sex, and temperament and habit, which modify the action of medicines, and the modes of their administration, with a few rules for prescriptions. We have alluded to Chapter 12, on Classification, which concludes this Part.

The above, we are aware, is a mere summary of the contents of the present work, and we intended it to be so.

We wished our readers, by reading *our* little preface, to be saved the trouble of wading through the whole work to see its general scope. We have now to show, how Dr. Mitchell has fulfilled his promise of "filling up deficiencies of smaller works," and, "introducing all that is necessary, with no unnecessary details" into his own. We would ask any of our *young* friends studying materia medica—for what do you refer to a work

on materia medica? Would you not wish among other things to know something about the pharmaceutical preparations. You may look in vain for them in the present work. We will transcribe the history of iron.

"CLASS II.—METALS THE OXIDES OF WHICH ARE NEITHER ALKALIES NOR EARTHS.

ORDER 1.—Metals which decompose water at a red heat.

FERRUM—IRON.

(*Derived from ferire, to strike.*)

"*History.*—Iron was known in the early ages of the world; its antiquity, however, is not so great as that of copper, silver, or gold; it is a constituent of the animal and vegetable, as well as of the mineral kingdom, and is very abundantly diffused in nature. Iron rarely occurs in its pure metallic form in the earth, most commonly in combination with oxygen or sulphur, or with oxygen and an acid.

"The ores from which iron is extracted are (in England) clay iron ore, a carbonate of the protoxide, which occurs chiefly in the coal formation; and (in Sweden and India) red hœmatite, and brown hœmatite, both of which are peroxides and magnetic iron ore, or the black oxide, which occur in primary rocks, and afford the finest kind of iron.

"*Preparation.*—The clay iron ore is first roasted, by which carbonic acid is driven off; it is then exposed to an intense heat in a blast furnace, mixed with charcoal, or coke and limestone; the carbonaceous matter deprives the ore of oxygen, and the limestone acts as a flux, combines with the earthy matters, (alumina and silica) into a fluid compound, which remains upon the surface, and afterwards constitutes the slag; while the fused metal accumulates at the bottom, and is run into moulds, where it forms what is called cast-iron, or pig-iron, in which state it contains several impurities; it afterwards undergoes the several processes of refining, puddling, and welding, before it is converted into malleable iron.

"*Properties.*—Iron is a hard metal, of a whitish grey colour when pure, and susceptible of a high polish; its taste is styptic; its texture fibrous; it is less malleable than several other metals, but possesses considerable ductility, and in tenacity it exceeds every other metal; its specific gravity is 7.7; it is attracted by the magnet, and is capable of becoming magnetic—a property possessed by but one other metal, nickel; when heated to redness it becomes soft, and in this state is capable of being welded; it requires a very intense heat for fusion, and has never been volatized. Iron has a strong affinity for oxygen, and attracts it from the air, when moisture is present, or when heated in the open air; it burns in oxygen gas with vivid scintillations; it is oxidized by dilute sulphuric acid, at the expense of the water, with evolution of hydrogen gas; nitric acid oxidizes it, at the expense of a part of the acid. Iron decomposes water at common temperatures, but slowly; at a red heat the decomposition is rapid, hydrogen gas being evolved. Iron unites with oxygen in two definite proportions only, forming a protoxide and a peroxide. The black or magnetic oxide, which was formerly supposed to be the protoxide, is a mixture of protoxide and peroxide.

"The chemical equivalent of iron is 28.

"PROTOXIDE OF IRON.

"*Preparation and Properties.*—Protoxide of iron is always formed when iron is acted on by dilute sulphuric acid; it is the base of protosulphate of iron, or the green vitriol of commerce, and of the native carbonate of iron. If we add

caustic potassa to a solution of protosulphate of iron, a white precipitate falls, which is the hydrate of the protoxide; it speedily, however, absorbs oxygen, changes colour, becomes green, and finally brown red; hence the protoxide of iron cannot be procured in an insulated state.

Its chemical equivalent is 36: it is composed of one equivalent of iron 28, and one equivalent oxygen 8.

"*Characteristics*.—1. The salts of the protoxide of iron have a green or bluish green colour, an astringent taste, and redden litmus paper; they are usually soluble in water, and all are soluble in dilute hydrochloric acid.

"2. Protoxide of iron is thrown down from its salts, as a white hydrate, which speedily changes to green and brown red, by caustic potash or ammonia.

"3. Carbonate and bicarbonate of potash, and carbonate of ammonia, precipitate it, as a white carbonate of the protoxide, which by exposure to the air becomes red.

"4. Phosphate of soda throws it down, as a white phosphate, which becomes green on exposure to the air.

"5. Ferrocyanuret of potassum (yellow prussiate of potash,) throws down a white precipitate of ferrocyanuret of the protoxide, which becomes blue by exposure to the air.

"6. Ferrosesquicyanuret of potassium (red prussiate of potash,) throws down a deep blue precipitate of Prussian blue.

"7. Hydrosulphuret of ammonia produces a black precipitate of protosulphuret of iron.

"8. Hydrosulphuric acid (sulphuretted hydrogen,) or infusion of galls, produce no precipitate.

"9. The double chloride of sodium and gold produces a purple precipitate.

"PEROXIDE OF IRON.

"*Preparation and Properties*.—Peroxide, or red oxide of iron, occurs in nature, under the forms of red and brown hematite. The rust of iron and protocarbonate, by exposure to the air, absorb oxygen, and are converted into peroxide of iron. It may be prepared artificially by exposing sulphate of iron to a high temperature, by which the water and acid are driven off, and the protoxide is converted into peroxide; or by dissolving iron in nitrohydrochloric acid, and adding an alkali; when a bulky brown precipitate of the hydrated peroxide of iron falls down, which when dried assumes a deeper colour. The peroxide of iron combines with acids to form salts, but is a weak base, as its salts are easily decomposed.

"Its chemical equivalent is 80; it is composed of two equivalents iron 56, and three equivalents oxygen 24.

"By some chemists it is called the sesquioxide of iron.

"*Characteristics*.—1. The salts of the peroxide of iron have a red or brown colour, an astringent taste, and an acid re-action upon litmus paper; those which are insoluble in water dissolve in hydrochloric acid.

"2. The peroxide of iron is precipitated as a bulky reddish brown hydrate, by caustic potash, soda or ammonia, by carbonate, and bicarbonate of potash, and carbonate of ammonia.

"3. Ferrocyanuret of potassium throws down Prussian blue; but the ferrosesquicyanuret produces no precipitate.

"4. Gallic and tannic acids, and infusion of galls produced a bluish black precipitate.

"5. Sulphocyanic acid, and sulphocyanuret of potassium, produce a blood red precipitate; and meconic acid a wine red precipitate.

"6. Hydrosulphuric acid (sulphuretted hydrogen) produces a milky precipi-

tate of separated sulphur, and the peroxide is converted into the protoxide of iron." 51.

The "*deficiencies*," of other works are indeed filled up in this interminable description of iron; but we question if all that is "*necessary*," is introduced. The details here, it will be observed, include the physico-chemical properties of the metal; but we have to learn *from other works* the history of iron considered as an article of the materia medica.

As to the "unnecessary details" we are quite of Dr. Mitchell's opinion with reference to works in general. So much unnecessary detail is often found, that it is difficult at times to detect the real substance-matter. But we cannot help feeling that the present volume is not quite free from the same criticism.

For example: before the individual history of each metal above alluded to, we have the following remarks on the general properties of metals.

"The metallic elementary bodies are much more numerous than the non-metallic; forty-two being known to chemists; only a small proportion of them, however, are possessed of medicinal virtue.

"The metals are distinguished by the following characters:—They are all opaque, good reflectors of light, and in general possess the metallic lustre; they are all very good conductors of heat and electricity; and when the compounds which they form with many simple substances are submitted to the action of galvanism, the metal appears always on the negative side; hence they are all *electro-positive substances*. Many of the metals are remarkable for great sp. gr.; gold and platinum are the densest bodies in nature; the former being 19, the latter nearly 21 times heavier than an equal bulk of water; a few metals, however, are very light, potassium and sodium float upon water. Some metals possess the property of malleability, that is, admit of being beaten, or rolled out into thin leaves, depending upon a high degree of tenacity in the metal, with a certain degree of softness; gold is the most malleable of the metals; silver, copper, tin, and lead rank next in malleability. Most of the malleable metals are also ductile, that is, admit of being drawn out into wire; the ductility of a metal, however, is not in all cases proportionate to its malleability; iron is a very ductile metal, but not very malleable. The tenacity of a metal is determined by the weight which a wire of a given thickness will support, without breaking: iron possesses this property in the highest, and lead in the least degree. The majority of the metals have neither taste nor smell; a few, however, when rubbed, or when their temperature is very slightly elevated, have a peculiar odour and taste, as copper, iron, and tin. Metals are usually hard; lead, however, is soft, and potassium yields to the pressure of the finger; a few, are brittle, as bismuth, antimony, and arsenic.

"All the metals, with the exception of mercury, are solid at ordinary temperatures; they may all, however, be fused by heat, but the temperature at which they liquefy is very different, thus potassium fuses at 136° of Fahrenheit's thermometer, tin at 442°, bismuth at 497°, lead at 612°, zinc at 773°, silver at 1873°, copper at 1996°, gold at 2016°, iron requires the highest heat of a smith's forge before it fuses; and an alloy, composed of two parts by weight of bismuth, one of lead, and one of tin, fuses when heated a little above 200°, and consequently melts in boiling water: it is called the fusible metal from this circumstance. Metals differ also from one another in volatility; the majority are highly fixed substances, while some, as arsenic, zinc, and mercury, are readily volatized. Metals, like other solids, expand and contract when exposed to changes of temperature; but the degree of expansibility varies, each metal possessing a rate of expansion peculiar to itself; thus lead expands in volume one 350th, and iron one 800th, in other words 350 cubic inches of lead become 351, and 800 of iron

801. In some common operations the expansion and contraction of a metal are taken advantage of, as in hooping casks, and applying the tire or iron band to carriage-wheels, the iron is made, in the first instance, too small to fit, it is then heated until it expands sufficiently, and applied; when it is suddenly cooled by throwing water upon it: the contraction produced by which is so great, that the parts are bound together with exceeding firmness. Metals appear to be more susceptible of changes of bulk, by variations in temperature than other solids; hence their expansion by heat and contraction by cold afford the means of measuring degrees of temperature. The instrument used for this purpose is termed a thermometer, (derived from θερμος heat, and μετρον measure.) Mercury is the metal usually employed for thermometers; but for measuring very low temperatures, alcohol is used, as it cannot be frozen; and for temperatures above that at which mercury boils, an instrument termed a pyrometer (derived from πυρ fire, and μετρον measure) is employed.*

"Metals differ from one another in colour; the majority have a grey or bluish white tinge: gold, however, is yellow, copper red, bismuth has a reddish tinge, and silver is white. Their texture also varies; iron is fibrous, zinc and antimony are lamellated, and many of them are capable of crystallizing; this is best effected by fusion and slow cooling. The most usual forms of the crystals of the metals are the cube and octahedron.

"Metals combine, or may be made to combine with one another, giving rise to the important class of compounds denominated alloys, (in those cases in which mercury enters as an ingredient, the compounds are termed amalgams.) The alloys in most common use are brass, and pinchbeck, combination of zinc and copper; bronze and bell-metal, combination of tin and copper; tin plate, an alloy of tin and iron; pewter, a combination of lead and tin. The standard gold and silver of commerce are alloys of gold or silver, with a little copper. Metals unite also with several other simple substances; they all combine with oxygen, sulphur, and chlorine; many of them also combine with iodine, phosphorus, cyanogen, &c. &c.

"A few of the metals, as gold, silver, copper, bismuth, and mercury, occur in nature in the pure metallic form, or alloyed with other metals; the majority, however, are only found in combination with other substances, particularly sulphur and oxygen, in which state they are said to be *mineralized;* and the native compounds of the metals are termed their *ores.*" 34.

We must confess we cannot but think that these remarks are irrelevant

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* "Fahrenheit's Thermometer is the one in common use in this country. Its scale commences with the temperature produced by mixing snow with salt—that is 32 degrees below the freezing point of water, (which at the time was supposed to be the lowest degree of artificial cold.) The space between this, zero or 0°, and the boiling point of water, is divided into 212 degrees; consequently in Fahrenheit's scale water freezes at 32°, and boils at 212°. In Reaumur's Thermometer, which is used in Germany, the freezing point of water is zero or 0°, and the boiling point 80°; and in the Centigrade Thermometer, which is generally employed in France, the freezing point of water is zero or 0°, and its boiling point 100°. Mercurial thermometers may be employed to indicate degrees of temperature between 20 or 30 below zero, and 580° of Fahrenheit; above this point the mercury boils in the bulb of a thermometer hermetrically sealed, (not being subject to atmospherie pressure.) An alcohol thermometer cannot be employed to indicate a temperature above 180°; if subjected to a higher temperature it will burst, owing to the conversion into vapour of the alcohol; but, as already observed, it may be employed for a much lower temperature than a mercurial thermometer."

in a work on materia medica. As to the note on the thermometer, it would have been out of place in a work on chemistry.

We turn to CHAP. IV. Dr. Mitchell has been describing the general properties of salts. He has defined a salt—has mentioned some of the properties of salts: effervescence, for example, deliquescence, &c. He has shown the difference between neutral salts, subsalts, and supersalts, and, after telling us that ic-acids produce ate-salts and ous-acids ite-salts,* he finishes his account of salts with the two following paragraphs.

"The combinations of chlorine, iodine, and bromine, with metals, are distinguished by the termination *ide:* thus we have a chloride, iodide, and bromide of potassium. When the metal forms more than one compound with any of these bodies, they are distinguished in the same manner as the salts of the oxides, by the prefix *proto, bi, per di*: thus we have a protochloride and a bichloride of mercury, a dichloride of copper, and a protiodide sesquiodide, and biniodide of mercury.

"The combinations of sulphur, phosphorus, &c. with metals, are distinguished by the termination *uret:* and when they combine in more than one proportion with a metal, they are distinguished by the prefix *proto, bi, ter, sesqui*, as proto-sulphuret and bisulphuret of mercury, sesquisulphuret of antimony, &c." 86.

We are perfectly at a loss to know what these remarks have to do with the subject of salts, much more what is the object of their introduction in a work on the materia medica.

We have alluded to pages of (what we think) "unnecessary details," in the lists of the pharmaceutical preparations. The tinctures of the Pharmacopœias arranged alphabetically, occupy nearly a page; the ointments more than half a page; the decoctions about half a page; the others, syrups, infusions, mixtures, &c. &c. more or less space.

We did not gain any information from these lists; and we could not help thinking that pages full of well-digested remarks on the peculiarities in the modes of preparation of individual tinctures, extracts, &c. would have well supplied their place.

But we must not quit this work without some notice of the style of the author. It is peculiar—we cannot propose it for imitation. We cannot compliment Dr. Mitchell either on its perspicuity or its accuracy. Our readers must have formed a tolerable idea of it from the perusal of the preface. We shall introduce them to a few other singular passages. "Metals by combining with oxygen (observes Dr. Mitchell, Chap. 3,) give origin either to oxides, acids, or alkalies. The alkalies, with the exception of ammonia, the earths, and the alkaline earths, being combinations of a metallic base with oxygen, are now considered to be metallic oxides." Is ammonia to be considered a combination of a metallic base with oxygen? or are the earths and the alkaline earths to be considered as alkalies?

This passage is followed by another, which contains some gross libels on both the Greek and Latin tongues.

"The same metal is susceptible in many cases of combining with different proportions of oxygen to form oxides; and these are distinguished from one

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* All these remarks are appropriate enough in a work on chemistry; but we question whether we should have introduced them in a work on materia medica.

another by a derivation from the Greek being prefixed, as *Pro*, *Bi*, or *Deu*, *Tri*, *Ter* or *Per*; the oxide which contains the minimum of Oxygen, is termed a *Protoxide*, and that which contains the largest proportion, a *Peroxide*." 75.

All these prefixes are from the Greek! Our editor would flounder for some time in a Greek Lexicon even for pro, deu, or tri, meaning 1st, 2nd, and 3rd—longer still for bi or ter—and we are surprised that he should quote *pro*toxide as an example of the application of the prefix *pro*. This passage is followed by another explaining the meaning of the term *sesqui*.

"The term *Sesqui* is also used to designate an oxide, which has little or no tendency to unite with acids, and which contains *less** than one atom of oxygen to one atom of the metal; thus, when the proportion of oxygen in three oxides of the same metal, is in the relation of 1, 1½, and 2, the second is termed a *Sesquioxide*." 75.

Had such an explanation occurred in an elementary work on chemistry, we should have been disposed to have considered it a blunder—we are only surprised to find such points as these dwelt on, in a work on materia medica.

"The metallic oxides," Dr. Mitchell continues, "are distinguished by the property of combining with acids to form salts;" we would ask, are distinguished from what? If this be their grand distinguishing property, then surely ammonia, morphia and brucia are metallic oxides.

We have before alluded to Chap. 4, as containing the general properties of salts. We now subjoin Dr. Mitchell's definition of a salt.

A salt is a definite compound of an acid and an alkaline, or salifiable base, in which the properties of each of these bodies are neutralized; and the resulting compound possesses neither the character of an acid, nor of an alkali; but chemical and other qualities, distinct from either. Several of these substances, which are commonly called salts, are not composed of an acid and an alkaline, or salifiable base, as chloride of sodium, (a compound of chlorine with a metal,) and are not consequently included in this definition. These bodies, however, are now grouped together in a separate division of the salts, under the name, haloidal salts." 82.

A *salt* is a definite compound of an acid and alkali; but several of these substances commonly called salts are not salts, and yet they are grouped together in a separate division of *salts*, and called haloidal salts. How is a student to know what a salt is?

On the same subject of salts Dr. Mitchell observes. "The same quantity of water may hold several salts in solution, provided they have no tendency to decompose each other; and, on evaporation of the water (provided they have no tendency to combine together), the salts will crystallise separately. In many cases, however, they mutually decompose each other, and two new salts are formed." The formation of *two* new salts by the mutual decomposition of *several* is not common.

Again Dr. Mitchell observes, concerning the vegetable acids:—

"*History*.—The vegetable acids form a very numerous division of the proximate principles; as many as 116 have been examined by chemists; they are

* Dr. Mitchell prints *less* in italics.

named also organic acids, (which term includes the animal acids,) to distinguish them from those of mineral origin. Some of these acids exist ready formed in vegetable substances, in combination with alkaloids; and others are formed artificially." 123.

We could not help smiling at the introduction of the parenthesis. Are animal acids then species of vegetable acids? Also, will not the appellation of vegetable acids sufficiently distinguish them from those of mineral origin?

Many other inaccuracies occur in various parts, such as considering cinchona and guaiacum to contain volatile principles, p. 153; considering *gutta* and *minimum* as identical, p. 219; and we are of opinion that a careful revision of the present part should precede the appearance of the second.

III. A DISPENSATORY, &c.

Dr. CHRISTISON's Dispensatory is a commentary on the Pharmacopœias of Great Britain, comprising the natural history, description, chemistry, pharmacy, actions, uses, and doses of the articles of the materia medica.

The articles of the materia medica are arranged alphabetically. Before commencing their description, Dr. Christison presents us, in an Introduction with some of the GENERAL PROCESSES IN PHARMACY.

His object is not a systematic treatise on the Preparation of Medicines, but "to describe a few articles of apparatus, which have been recently introduced into the art of chemical pharmacy, and without which the results aimed at by the colleges cannot, as appears to the author, be with such certainty, attained.

His observations, in fact, are running commentaries on the pharmaceutical instructions of the Pharmacopœias.

Under the head of *Acids* we have brought before us a convenient apparatus, Liebig's Refrigeratory, for condensing all vapours which do not act on cork. It is very simple, and in the above-mentioned cases of distillation, is to supersede Wolfe's apparatus.

To show the style of the remarks in this Introduction we subjoin his section on the Alkaloids.

"The vegetable alkaloids may be obtained by a variety of processes; which invariably however comprehend decomposition of the alkaloidal salt in the crude drug, either by the superior affinity of an alkali, earth, or alkaline carbonate, or by double decomposition with some compound salt, whose base forms an insoluble salt with the acid in the drug. Active neutral principles, such as narcotin from opium, piperin from white pepper, picrotoxon from cocculus-indicus, and elaterin from elaterium, may be obtained through the agency of such simple solvents as water, rectified spirit, and sulphuric ether, used singly or successively.

"In the formula for preparing veratria recommended by the Edinburgh College, the process of exhaustion by percolation is mentioned for the first time in the Pharmacopœias. Some experience is required to apply this process in all cases with success. But when well performed, it is greatly superior in general to every other mode of extracting the active matters of vegetable drugs, where the liquid used is spirituous or etherial; and it is often not less advantageous in

the instance of water, as well as acidulous fluids. The precautions for applying it successfully will be considered under the head of Tinctures." iv.

The principle of obtaining the alkaloids is here *very* generally exhibited. The particular process for each alkaloid is to be met with under its appropriate head. The process of per-colation mentioned above, is not employed in the London Pharmacopœia, but the following general directions are given for it by the Edinburgh College.

TINCTURES.

"A much superior method, however, has been lately introduced, which answers well for most tinctures, namely the method of displacement by percolation. According to this process, the solid materials, usually in coarse or moderately fine powder, are moistened sufficiently with a solvent to form the thick pulp; in twelve hours, or frequently without any delay, the mass is put into a cylinder of glass, porcelain, or tinned-iron, open at both ends, but obstructed at the lower end by a piece of calico or linen, tied tightly over it as a filter; and the pulp being packed by pressure, varying as to degree with various articles, the remainder of the solvent is poured into the upper part of the cylinder, and allowed gradually to percolate. In order to obtain the portion of the fluid which is kept in the residuum, an additional quantity of the solvent is poured into the cylinder until the tincture which has passed through equals in amount the spirit originally prescribed; and the spirit employed for this purpose is then recovered for the most part by pouring over the residuum as much water as there is of spirit retained in it, which may be easily known by an obvious calculation in each case. The method by percolation, where applicable, will be found much more convenient and expeditious than the mode hitherto commonly followed; and it exhausts the solid matters in general much more completely. As considerable practice however is required for managing the details in different cases, more especially in regard to the degree of minuteness of division of the solids, and the degree of firmness with which they are to be packed in the cylinder, we have thought it right to direct that the method by maceration may be followed as an alternative. But the method by percolation is now preferred by all who have made sufficient trial of it to apply it correctly." xxi.

Dr. Christison comments on this process, and considers it the best, and to the experienced it undoubtedly is so, and to those druggists and others who purpose trying it, the above observations with the accompanying simple apparatus, which is figured, will be found very useful. It is troublesome, however, and the London method of maceration for fourteen days, and straining, although it may not in all cases, quite exhaust the substance of its soluble ingredients, yet certainly makes very good tinctures.

We are a little disappointed with the criticisms on the vegetabilium preparatio. Neither the Edinburgh nor the Dublin College give any general directions for the collection of indigenous plants. The London gives the following, which we believe to be founded on strictly physiological principles.

"GENERAL DIRECTIONS, *Lond.* Vegetables are to be gathered in dry weather, when not wet with showers, or dew. They ought to be collected annually, and thrown away when kept longer than a year.

"*Roots* are dug up for the most part before the appearance of the stems or leaves.

"*Barks* should be collected at the season when they are most easily detached from the wood.

"*Leaves* should be gathered after the flowers are expanded, and before the seeds ripen.

"*Flowers* should be plucked when fresh blown.

"*Seeds* are to be collected when ripe, and preserved in their own pericarps." xxi.

Dr. Christison observes :—

"The collection of vegetable simples is an occupation that requires more skill and knowledge than are usually possessed by those who follow it." "The principles now current have been succinctly stated by the London College in its directions printed at the head of this article. But the doctrines there espoused are subject to numerous exceptions; and other modifying circumstances connected with vegetation might be mentioned, such as season, climate, weather, site, soil, exposure, cultivation, which have not been adverted to at all,—probably because the College felt that their respective influences have not been determined with such accuracy, as to admit of being expressed in general rules." xxvi.

Dr. Christison adds :—

"It is surprising how little attention this whole subject,—interesting alike in a practical point of view, and in relation to the physiology of plants,—has hitherto received from scientific men. A few years ago I commenced an experimental inquiry on some departments of it, which other occupations compelled me to suspend. But I had gone quite far enough to be convinced, that the doctrines commonly held, as to the influence of various circumstances in vegetation on the activity of medicinal plants, are often erroneous, and generally subject to important exceptions; that the practical rules founded on those doctrines are sometimes faulty and that the pharmaceutic art stands much in need of a new and thorough investigation of this imperfectly trodden field." xxvi.

We merely observe that these remarks add little to our previous information on this subject.

We proceed now to the review of the special articles on individual drugs. Each is complete in itself. We select two as specimens.

"CONIUM, *E. D.* CONII. FOLIA, *L. Leaves of Conium maculatum, L. W. DC. Spr. Hemlock.*

"TESTS, *Edin.* The power triturated with Aqua potassæ, exhales a powerful odour of conia.

"CONII FRUCTUS, *L. Fruit of Conium maculatum, &c.*

"EXTRACTUM CONII, E. L. SUCCUS SPISSATUS CONII, D.

"PROCESS, *Edin.* Take of
Conium, any convenient quantity; beat it into a uniform pulp in a marble mortar, express the juice and filter it. Let this juice be evaporated to the consistence of firm extract either in a vacuum with the aid of heat, or spontaneously in shallow vessels exposed to a strong current of air freed of dust by gauze screens.

"This extract is of good quality only when a very strong odour of conia is disengaged by degrees on its being carefully triturated with aqua potassæ.

"PROCESS, *Lond. Dub.* To be made from fresh leaves like extract of Monkshood.

"TINCTURA CONII.

"PROCESS, *Edin.* Take of
Fresh conium leaves, twelve ounces;
Tincture of cardamom, half a pint;

rectified spirit, a pint and a half.
Bruise the leaves, express the juice strongly; bruise the residuum, pack it firmly in a percolator: transmit first the tincture of cardamom, and then the rectified spirit, allowing the spirituous liquors to mix with the expressed juice as they pass through; add gently water enough to the percolator for pushing through the spirit left in the residuum. Filter the liquor after agitation.

"PROCESS, *Lond. Dub.* Take of
Dried conium leaves, five ounces (two, D.);
Cardamom, bruised, an ounce;
Proof-spirit, two pints (a pound by measure, D.)
Macerate for fourteen days (seven D.) and strain.

"UNGUENTUM CONII, D.

"PROCESS, *Dub.* Take of
Fresh conium leaves, and
Prepared lard, of each two pounds.
Boil the leaves in the lard till they shrivel; strain through linen.

"CATAPLASMA CONII, D.

"PROCESS, *Dub.* Take of
Dried conium leaves, an ounce;
Water a pound and a half by measure.
Boil down to a pound, and add to the strained liquor enough of the same powder to make a poultice.

"FOR. NAMES.—*Fren.* Grande cigue.—*Ital.* Cicuta maggiore.—*Span.* Cicuta; Ceguda.—*Port.* Cigyde.—*Ger.* Gefleckte Schierling.—*Dut.* Dollekervel; Scheerling.—*Swed.* Spraklig odort.—*Dan.* Skarntyde.—*Russ.* Boligolov piatnistoi.

"FIGURES of Conium maculatum in Hayne, i. 31.—Nees von E. 282.—Steph. and Ch. i. 13." 359.

These useful and necessary particulars introduce the article. Conium is treated under the five following heads. 1. Its general history and introduction into medicine. 2. Its natural history. 3. Its chemical history. 4. Its adulterations. 5. Its actions and uses.

The general opinion certainly is that conium is identical with the Κώνειον of the Greeks. Dr. Christison, however, discredits this. He considers that the description by Dioscorides, differs materially from the characters of the conium maculatum of modern botanists, and that the accounts given by Nicander and Plato of its action as a poison do not tally well with what is now known of its effects, and the ancient name cannot be traced, like others, in the language of the modern Greeks, who call the true plant Βρομοχορτον.

"*Natural History.*—The plant is a biennial, belonging to the natural family *Umbelliferæ* and to Linnæus's class and order *Pentandria Digynia*. It is met with abundantly in this country, as well as in most parts of the Continent, along hedges and roadsides, and on exposed banks of rubbish. In its first season it consists of a long slender root and a few small root-leaves spread flat upon the ground. Early in its second summer it has a solid, white, ligneous and amylaceous root towards two feet or upwards in length; and it afterwards pushes up a flowering stem commonly between two and four feet, sometimes even six feet, in height, hollow, jointed, and speckled with numerous dark purple spots. Its leaf-stalks are similarly speckled. The fruit which ripens in August and September is plano-convex, with five undulated ridges on its convexity. The whole plant is smooth and destitute of hairs or down. It emits, especially in sunshine,

a strong peculiar odour like that of mice,—which by many authors has been incorrectly likened to that of cat's urine. It bears a general resemblance to various umbelliferous plants, and has been confounded by the unskilful with *Æthusa cynapium*, *Œnanthe crocata*, *Cicuta virosa*, *Myrrhis odorata*, *Myrrhis temulenta*, and some other plants. In its second summer it may be easily distinguished by its purple-spotted stem and leaf-stalks from every species except the *Myrrhis temulenta*, a very common inhabitant of roadsides; and that species is at once known from it by every part of the plant being hairy. In its first season, and also in its second until the month of May, when it first begins to push up its flowering stem, the leaf-stalks are seldom spotted; in which condition its best character, for those not familiar with its appearance, is the strong peculiar odour exhaled when the leaves are bruised with solution of potash." 360.

Dr. Christison now adverts to the period of gathering the leaves and fruit. He expresses doubts as to the best period. According to the authority of Dr. Fothergill, "the leaves are in the most active state, and ought therefore to be gathered for medical use, when the plant is in full flower, or *even a little later, when the flower is passing away and the fruit is forming.*" "This rule, I suspect, (says Dr. Christison) is far from being so certain as many think. And from such experiments as I have made on its poisonous properties, there would appear to be no great difference at any season; for even in November and March of *its first year* its activity is very great."

We are far from depreciating any *observations* accurately made, however averse to deductions from physiological principles; but we cannot help thinking, that if the directions of the London Pharmacopœia, with respect to the gathering of leaves above-mentioned, were adopted in reference to conium, we should get them in full vigour. The mere floral envelopes in umbelliferæ are very insignificant, and will take but little nourishment for their formation. But the grand object of the plant in flowering, as far as the present point is concerned, is to concentrate its principles in the seed, the miniature representative of the species. The juices of the whole plant, leaves among the rest, are consequently employed in this object—hence they should be gathered, as the College direct, before the seeds ripen. Dr. Christison says, its activity is very great even in November and March of its *first year.* This is quite true, for the plant is a biennial; the leaves are then performing their office of assimilation, they contain the secretions of the plant, and as no seed is formed that year, they retain them till they die.

Chemical History is very complete. The two leading principles are *Conia* and a peculiar *Aromatic oil.* The volatile oil, obtained in the usual way by the distillation of the leaves with water, is remarkable, inasmuch as it is not poisonous. "In this respect (says Dr. Christison) hemlock presents one of the most distinguishing characters of the family to which it belongs." We must confess, however, in examining this oil, we have always had a suspicion that it was a modification of conia, effected by distillation; for if there be an aromatic oil in the leaves, there will be (probably at least) a volatile oil in the fruit; and yet it is well known that the Conium Cremocarps have no vittæ for its reception.

"Conia is at first colourless, but is very prone to become brown by oxidation. It has an intense, peculiar, suffocating odour, and an extremely acrid, benumbing taste. Exposed to the air, it gradually becomes brown, disengages ammonia

deposits a resinous matter, and loses most of its activity. It boils at 370° and may be distilled in close vessels without alteration. It distils over with water at 212° like the volatile oils. It is sparingly soluble in water; but water unites with it in the propertion of about a fourth part to form a hydrate. It is very soluble in alcohol and ether, in the fixed and volatile oils, and also in weak acids, which it neutralizes. Its salts have not as yet been crystallized. It exists in the greatest abundance in the full-grown, green fruit; the ripe fruit contains less; the leaves still less; and the root very little. Eight pounds of green fruit will yield half an ounce of hydrated conia; but they contain much more, for a large proportion is obviously decomposed in the process.——Some have imagined that conia does not exist in the plant and is not a pure alkaloid, but is formed by the action of potash and owes its alkalinity to ammonia (Deschamps). This however is a mistake. For chlorine, which disengages azote from a weak solution of ammonia, has no such effect on solution of conia: and, like solutions of other vegetable alkaloids, the natural hemlock-juice gives with infusion of galls a precipitate, from which conia may be obtained by the ordinary processes for other alkaloids in the like circumstances (Boutron and Henri)." 362.

Two methods are given for obtaining it—one is extremely simple. "Cautiously distil from a muriate of lime bath a mixture of strong solution of potash with the alcoholic extract of the unripe fruit. The alkaloid passes over with the water, and floats upon it like an oil."

Dr. Christison shows the precautions necessary in preparing the ordinary *Extractum Conii*, the expressed juice inspissated by *heat*; the superiority of Mr. Barry's process of evaporation in vacuo; and the supersuperiority of the process of the Messrs. Smith, who concentrate the expressed juice to a thin syrup in vacuo, and then finish the evaporation spontaneously. He also strongly recommends the tincture of conium to be made from the recent leaves, "by expressing the juice, transmitting rectified spirit through the residuum, mixing the watery and spirituous fluids, and filtering the product." This *must* be an improvement on the dried leaves.

After alluding to the *Adulterations*, we are brought to the Actions and Uses.

"*Actions and Uses.*—The actions of hemlock have been long misunderstood. It has been known immemorially as a narcotic poison of great virulence; and it was supposed to excite convulsions and fatal coma, to render the blood fluid, and to exhaust the irritability of the heart. I have endeavoured on the contrary to show, that it leaves the heart's action unimpaired, and does not prevent the blood from coagulating, any more than other causes of death by asphyxia,—that it does not excite convulsive spasms or bring on insensibility,—but that it exhausts the nervous energy of the spinal chord and voluntary muscles, occasioning merely convulsive tremours and slight twitches, and eventually general paralysis of the muscles and consequent stoppage of the breathing (Trans. Roy. Soc. Edin. 1836.) I was unable to detect its active principle in the blood; but Mr. Judd has since been more fortunate. Mr. Judd's observations on its poisonous properties do not exactly correspond with the view now given of them; and among other statements, he remarked that the contractility of the heart is powerfully affected. I apprehend, that the most essential differences between us arise from his not having appreciated precisely the phenomena, which are intricate and difficult to follow. The effects of hemlock in medicinal doses are very imperfectly known. Since the time when it was currently adopted as a remedy in consequence of the recommendations of Storck, it has been generally thought to be, when administered internally, an anodyne, hypnotic and calmative, as well as to possess important deobstruent properties, especially in malignant tumours

and ulcerations. It has likewise been held to be a diuretic, to diminish the venereal appetite, and to lessen the secretion of milk. Hence it has been employed in schirrhus, in cancerous and other malignant ulcers, in strumous sores and enlargement of the glands, in pseudo-syphilitic ulcers, eruptions and nodes, in chronic enlargements of the liver and spleen, in chronic catarrh, asthma and whooping-cough, and in neuralgia of all kinds. But the deobstruent virtues of hemlock are now almost universally discredited; its diuretic action is too unimportant to be available in practice; and little faith can be attached to what has been said by our predecessors of its influence in diseases of the nervous system, because the preparations they used were often inert, and the doses they administered too small to produce positive effects even though the preparations had been of good quality. The only careful investigations made since the conditions for obtaining good and uniform preparations were known are those of Mr. Judd (Med. Bot. Trans. 1839;) who infers from experiments with medicinal doses upon cats and other animals, that a well-made extract causes great languor and drowsiness and often profound sleep for two or three hours, lessens muscular excitability, and reduces the circulation as well as the animal heat. He is therefore inclined to believe that hemlock really deserves the reputation it has enjoyed with many of being an efficient anodyne and hypnotic; he adds, that in some trials with it in patients affected with pectoral complaints he found it to have a salutary effect in allaying cough and promoting sleep; and he thinks it peculiarly applicable to the treatment of hypertrophy of the heart, phrenitis, and other affections attended with an excited or excitable state of the circulation. The few trials I have myself made with well-prepared extracts have not yielded such favourable results. I have occasionally found it to appearance useful as an anodyne and calmative in scirrhous uterus, but cannot say much for its virtues as such in neuralgic affections. On the whole it appears to me that the entire subject of the medicinal actions and uses of hemlock requires to be investigated anew; and it well deserves investigation, considering its singular energy and peculiar effects as a poison." 364.

We have transcribed nearly the whole of Dr. Christison's remarks on the actions and uses—we have only to add the well-known caution with regard to *conium*—take care that the preparations do actually contain conine.

The same complete method of description is pursued in the article on *Sulphate Magnesia.*

"MAGNESIÆ SULPHAS, *E. L. D. Sulphate of Magnesia.*
"TESTS, *Edin.* Ten grains dissolved in a fluid-ounce of water, and treated with solution of carbonate of ammonia, are not entirely precipitated by 280 minims of solution of phosphate of soda (See *Tests.* 1 salt, 20 water.)
"TESTS, *Lond.* Crystaline: very easily soluble: the solution does not give off hydrochloric acid on the addition of sulphuric acid. One hundred grains dissolved and added to a boiling solution of carbonate of soda yield 34 grains of dried carbonate of magnesia.
"PROCESS, *Dub.* Take of.
Commercial sulphuric acid, twenty-five parts;
Water, one hundred parts;
Carbonate of magnesia, twenty-four parts or a sufficiency.
Mix the acid and water, and gradually add the carbonate to saturation.
Evaporate the filtered liquor, so that it may crystalize on cooling.
"FOR. NAMES.—*Fren.* Sulphate de Magnésie; Sel d'Epsom.—*Ital.* Solfato di magnesia; Sale d'Inghilterra; Sale d'Epsom.—*Span.* Sal. amarga; Sal. de la higuera.—*Port.* Sal. cathartico amargo.—*Ger.* Schwefelsäure magnesia;

Bittersalz; Ebsamer-salz: Seidlitzer-salz.—*Swed.* Bittersalt; Engelskt-salt. *Dan.* Englesk laxeersalt.—*Russ.* Sernokislaia magnesia." 615.

Its *General and Natural History* is soon discussed.

"SULPHATE OF MAGNESIA (Epsom salt, English salt, Bitter salt, Seidlitz salt,) was discovered in 1694 by Grew (Geiger.) It exists abundantly in some mineral springs, as in those of Seidlitz and Saidschütz* in Bohemia, of which it constitutes about one per cent, and above one-half the total saline contents. In the water of Epsom, whence it has derived its familiar name, it amounts to about a four-hundredth of the water. It is also contained in considerable proportion in the bittern of sea-water, from which common salt has been prepared. It is farther found in some soils, and sometimes effloresces in capillary crystals." 615.

Chemical History.—The various methods of obtaining the salt and its chemical characters are sufficiently fully detailed. The most important methods are the following.

"From bittern alone it may be obtained by simple evaporation and crystallization; but it is also usual in the first place to add a little sulphuric acid to the liquid, so as to convert into sulphate the chloride of magnesium which forms part of the saline ingredients." 615.

We do not recommend this process. The chlorides are scarcely ever entirely got rid of, and a more or less deliquescent salt is apt to be obtained. The several processes of Dr. Henry, of Manchester, which succeed, are much better, more especially the following:

"From dolomite, or magnesian limestone,—a common mineral, composed of carbonate of lime and carbonate of magnesia,—it may be prepared by converting the carbonates into sulphates, and separating the sulphates by means of the inferior solubility of that formed with lime." 615.

Amongst the chemical characters, which are too familiar to require further mention, sulphate magnesia is said "when slowly crystallized, to form large rhombic prisms, often truncated on the obtuse edges, and terminated by two or four converging planes. Sulphate of zinc and sulphate of soda have the same crystaline form." Surely sulphate soda belongs to the *oblique* prismatic system.

"The sulphate of magnesia *now* used in Britain, seldom contains any impurity." For proving that it really contains no base but magnesia, Dr. Christison prefers the tests of the Edinburgh Pharmacopœia to the London tests; and the method must undoubtedly be more simple, and more easily performed.

Actions and Uses are known to most persons, but Dr. Christison mentions a fact perhaps not so generally known—the effect of the addition of sulphuric acid. He says:—"Sulphuric acid is an important addition. When added in sufficient quantity it covers the bitter taste of the salt, makes it

* To which we may add Pülna. Indeed, from the account of Mr. Spitta, in Dr. Johnson's "Pilgrimages to the Spas," it would appear to contain the largest quantity. Singularly enough, too, on the same authority, the spring at Seidlitz is quite unemployed, and has been so for 33 years.

sit easier on the stomach, counteracts its refrigerant effect, does not at all impair its energy, removes althogether its tendency to gripe or irritate the rectum, and even prevents it from interfering with the appetite and digestion."

Sufficient, we hope, has been said to set forth with clearness the plan and scope of the present volume. The works of Dr. Christison stand in no need of public recommendation.

IV. ELEMENTS OF MATERIA MEDICA AND THERAPEUTICS.

THE first edition of this very valuable work appeared in 1840, and we doubt not that many of our readers are acquainted with it. We are not, in general, in the habit of reviewing second editions; but the present instace, we have much pleasure in making an exception. To those who are familiar with Dr. Pereira's first edition, we shall first address a few remarks, and state the points of difference between it and the present; after which we shall proceed to the general review of the work, as usual.

The principal additions to the present edition are the articles on, what Dr. Pereira terms, the Psychical Agents, including the Mental Impressions considered as therapeutical agents; and the articles on Light, Heat, Electricity, Magnetism, and the Hygienic Agents, Diet, Exercise, and Climate. The effects of light and heat, in all their modes of application to the body, are examined. A distinct section is given to electricity of tension, galvanism and to magnetism. The article on food includes some of the recent researches of Dr. Prout on the subject of assimilation, into which we entered fully in a late review. Dr. Pereira adopts Dr. Prout's division of *simple* alimentary substances, into the saccharine, oleaginous, and albuminous; and treats of them separately under these heads. The *compound* aliments are said to be taken from the animal or vegetable kingdom. The relative merits of fish, flesh, fowl, and vegetable, in a therapeutical point of view, are discussed fully, and an interesting table of the diets of the different London hospitals is subjoined. But besides the introduction of these new articles into this edition, the processes of the British Pharmacopœias (including those of the new Edinburgh one) have been described in a more detailed maner. Upwards of a hundred woodcuts have also been added, which very much increase the interest of the work. They comprise figures of crystals, and of some insects used in medicine; microscopic views of the amylaceous grains of commerce, for which we are to tender our thanks to Mrs. Pereira; illustrations of chemical manufactures, and of the modes of preparing some vegetable products. The text also has been disencumbered of the references to different works, which have been thrown into the form of foot-notes, and in the typographical part, various improvements have been effected. These additions have of course increased the size of the volume, but not to any great extent.

We shall now proceed, without further preliminary observations, to our review.

The object of our author in this publication is more extended than appears at the first inspection of his title-page. He proposes to give, not

only a description of the materia medica, and their application to the cure of disease; but to include a concise account of the most important modern discoveries in natural history, chemistry, physiology, and therapeutics, as far as they pertain to pharmacology. It is with this view that woodcuts of the different animals used in medicine are introduced, and woodcuts of the principal chemical manufactures of the different compound articles of the materia medica. And it is with this view, we doubt not, that the recent experiments of physiologists on the action of different medicines, are detailed at considerable length. With regard to the best arrangement of the materia medica; it is still open to inquiry. Dr. Pereira has discussed this point at some length in his introductory remarks on general therapeutics; and he considers the natural-historical as the best, and has adopted it in the present work. We cannot doubt the practical superiority of the therapeutical arrangement, provided it *could* be carried out. But who is there so bold as to assign unquestionable places in a therapeutical arrangement, for all the materia medica, We need only quote one instance. Where would mercury be put? It is a stimulant, a sedative, a tonic, an alterative, a sialogogue, a specific, according to the varying views of the authors who have written on it. Next to the therapeutical, which cannot be, or cannot, at least be perfect, we prefer, with Dr. Pereira, the natural-historical. Our readers are now to be informed of the general plan of this arrangement. The first grand natural division of remedies is into *Organic* and *Inorganic*. The former includes the non-metallic and metallic elements, and their compounds; the latter, the vegetable and animal products. The physico-chemical history and uses of the former occupy the first volume. The vegetables are arranged according to the natural system of De Candolle and Lindley, and each drug from the vegetable kingdom will be found under the natural order of the plant which yields it.

The animals are classed according to the system of Cuvier.

The difficulty of finding any substance has been urged, we are aware, against the present arrangement; but this is a difficulty in imagination only: for the index of the present work, which is most elaborate and accurate, will entirely obviate it.

Our readers are thus acquainted with the general plan of this work; and they should now be informed that, previous to the special history of the materia medica, there is an Introduction of great length on the general properties of medicines. This was necessary to render the subject complete. We shall proceed to analyse this Introduction, and then give some examples of the method pursued by Dr. Pereira in the description of the materia medica individually.

We are led in Chap. 2, to assign all the effects of medicines to three acting forces,—mechanical, chemical, or dynamical force—the last term being applied to all actions not strictly referrible to the two first; and from the operation of one, two, or all of these forces in a medicine, the effects considered physiologically will be either local or remote; local from their primary action on the part to which they are applied, remote from their influence on the system. Of the local effects we need say but little, they may be expected *a priori* from our knowledge of the physico-chemical properties of the medicine; but the production of the remote effects is not *so easily* explained. Absorption and sympathy are the two rival doctrines

n this point, and Dr. Pereira devotes a chapter to the consideration of ach.

The Chapter on Absorption is well worth perusal. Dr. Pereira first establishes the point that poisons *are* absorbed. He proves this by these wo simple facts, viz. "the disappearance of certain substances from a hut cavity into which they had been introduced, and the detection of medicinal particles in the blood, secretions, or solids of the body."

With regard to the vessels effecting absorption, Dr. Pereira continues: "The particles of medicinal and poisonous substances are absorbed by the veins principally, but also by the lymphatics and lacteals."

And he establishes his positions by the following remarks.

"1. ABSORPTION BY THE VEINS.—The circumstances which seem to prove venous absorption are the following:—

"*a. Detection of substances in the venous blood.*—Tiedemann and Gmelin administered a variety of colouring, odorous, and saline substances to animals, mixed with their food, and afterwards examined the state of the chyle, and of the blood of the (splenic, mesenteric, and portal) veins. The *colouring* substances employed—were indigo, madder, rhubarb, cochineal, litmus, alkanet, gamboge, and sap-green; none of them could be detected in the chyle, but some were found in the blood and urine. The *odorous* substances used, were camphor, musk, spirits of wine, oil of turpentine, Dippel's oil, assafœtida, and garlic: they were, for the most part, detected in the blood and urine, but none were found in the chyle. The *saline* substances tried were—acetate of lead, acetate and cyanuret of mercury, chloruret and sulphate of iron, chloruret of barium, and ferrocyanide of sulpho-cyanide of potassium. A few of these were detected in the chyle, and most of them in the venous blood and urine. From these experiments we may conclude that, although saline substances occasionally pass into the chyle, odorous and colouring matters do not; all the three classes of substances, however, are found in the venous blood. These results, observe Tiedemann and Gmelin, are opposed to those of Lister, Musgrave, J. Hunter, Haller, Viridet, and Mattei, but agree with those of Hallé, Dumas, Magendie, and Flandrin.

"*b. Divisions of all parts but Blood-vessels.—Magendie's Experiment.*—Magendie and Delille performed a striking experiment, with the view of settling, if possible, the question of venous or lymphatic absorption of medicines and poisons. They divided all the parts of one of the posterior extremities of a dog, except the artery and vein, the former being left entire, for the purpose of preserving the life of the limb. A portion of the *upas tieuté* was then applied to a wound in the foot: in the short space of four minutes the effects of the poison were evident, and in ten minutes death took place. To the inferences drawn from this experiment, however, several objections have been stated: first, the exhibition of opium, to diminish the pain of the operation, has been said to vitiate the whole of the experiment; secondly the coats of the arteries and veins contain lymphatics, by which absorption might be carried on; and thirdly, as the poison was introduced into a wound, the poison might have combined with the blood, and have rendered it deleterious, without the process of absorption taking place. The first two of these objections have been obviated. In a second experiment, Magendie severed the artery and the vein, and reconnected them by quills, so as to preclude the possibility of absorption taking place by the lymphatics of these vessels: the effects were the same. Some years since I assisted my friend Mr. Lloyd, assistant surgeon of St. Bartholomew's Hospital, in performing an analogous experiment, using *strychnia* instead of the *upas tieuté*, and without administering opium: death took place in twelve minutes.

"The late Dr. Thomas Davies observes, on this experiment, that as the ab-

sorbents and veins communicate, it is possible that the poison flowed first into the absorbents, and from thence into the veins of the amputated portion of the limb.

"*c. Lacteals tied: effects of poisons still produced.*—Magendie says that symptoms of poisoning were observed in six minutes, when nux vomica was applied to the intestine, though the lacteals had been tied.

"*d. Bloodvessels tied: poisons do not act.*—Segalus tied the veins of a portion of intestine, and applied poison, but no effects were produced. Emmert observed, that when the abdominal aorta was tied, hydrocyanic acid was applied to the foot without producing any effect, but when the ligature was removed, symptoms of poisoning came on. Mr. Blake found that if a ligature be put around the vena portæ, and then poison be introduced into the stomach, it failed to act.

"It deserves notice, that the Academy of Medicine of Philadelphia found that nux vomica, introduced into the intestines, produced tetanus, although the vena portæ was tied.

"*e. Rapidity of absorption and circulation too great for the lymphatics or lacteals.*—Mayer found that ferro-cyanide of potassium could be detected in the blood, in from two to five minutes after its injection into the lungs. From this it has been inferred that it enters the blood too speedily for it to be explained by the slow circulation of the lymph. From later experiments, it appears that the rapidity with which poisons enter the blood has been greatly underrated. Professor Hering, of Stuttgardt, found that the time which a solution of ferro-cyanide of potassium, injected into the jugular vein, required to reach that of the opposite side, was in various experiments, from twenty to thirty seconds. And Mr. Blake states that the time required for a substance which does not act on the capillary tissue, to pass from any part of the vascular system back to the same part again, in dogs, varies from twelve to twenty seconds.

"Rapid as is the circulation of poisonous molecules, it has been supposed not to be sufficiently so to explain the operation of certain poisons which have been said to act instantaneously; and hence an argument has been raised in favour of the nerves being the medium by which the deadly impression is conveyed. But Mr. Blake asserts that an interval, always more than nine seconds, elapses between the introduction of a poison into the capillaries or veins, and the first symptom of its action;—a period sufficiently long for a poison to be brought into general contact with the tissues it affects.

"2. ABSORPTION BY THE LACTEALS AND LYMPHATICS.—The particles of medicinal and poisonous substances are probably absorbed by the lacteal and lymphatic vessels, as well as by the veins. But the process seems to be slow, and, moreover, is confined to certain agents. Tiedemann and Gmelin, whose experiments I have above referred to, were unable to recognize either colouring or odorous substances in the chyle, but occasionally detected certain salts. The absorption of saline, and non-absorption of colouring matters, have likewise been noticed by others.

"Some of the experiments performed by the Academy of Medicine, at Philadelphia, appear to be in favour of absorption, being effected chiefly by the lymphatics: but they are not conclusive." 112.

The mechanism of venous absorption is now adverted to. It is dependent on the principles of imbibition or permeation of membranous bodies to fluids set forth by Dutrochets, and since made of so much importance in the explanation of certain physico-vital processes. The fact then of absorption being established, it becomes in the next place a question, whether this absorption of a medicine has any thing to do with its remote effect. For, "we are not opposed" say Messrs. Morgan and Addison, "to the theory of venous absorption, but to that theory which would

associate with it the *absolute necessity* for the admission of a poison into the system," in order to the production of its constitutional effects. Dr. Pereira considers the following facts substantiate the point at issue.

1. The activity of substances injected into the blood-vessels.
2. The detection of substances in the blood.
3. The activity of medicines being promoted by the means which promote absorption, and vice versâ.
4. Magendie's well-known experiment of connecting the limb of an animal with the rest of the body by two quills placed in the great artery and vein, and finding the poison act just as readily.
5. The activity of hydrocyanic acid applied to the lower extremity the same after division of the spinal marrow at the lumbar region.
6. The inefficacy of poisons to a part, above which a ligature has been placed.

But, *how* do medicines and poisons which have entered the blood-vessels affect distant organs? This is a pertinent problem of our author, and not so easily solved. Dr. Pereira suggests three ways.

1. By modifying or altering the properties of the blood, and thereby unfitting it for carrying on the functions of the body.
2. By pervading the structure of the organ acted on.
3. By acting on the lining membrane of the blood-vessels.

These points are discussed at large, and with great ability.

The arguments in favour of the doctrine of absorption are so strong from the preceding remarks, that little is left to be said on the more popular theory of sympathy. Nevertheless this doctrine has been stoutly upheld by Messrs. Morgan and Addison, and it is principally with the view of answering these gentlemen that Chapter V., "on the Operation of Medicines by Nervous Energy," has been introduced. The whole chapter has to prove or disprove the following proposition,—"that all poisons, and perhaps, indeed, all agents, influence the brain and general system, through an impression made upon the sentient extremities of the nerves, and not by absorption and direct application to the brain."

Dr. Pereira enumerates the four following circumstances, as having been adduced in *favour* of this view, and proceeds to comment on each.

"1. The rapid action of some poisons.
2. The effects being disproportionate to the facility for absorption.
3. The effects of several poisons being analogous to those of severe injuries.
4. The rapidity of action not being diminished by increasing the distance of the brain from the part of the vascular system into which the poison is introduced." 123.

We cannot curtail the subsequent observations.

1. *The rapid Operation of some Poisons.*—One drop of pure hydrocyanic acid, says Magendie, placed in the throat of the most vigorous dog, causes it to fall dead after two or three hurried inspirations. Sir Benjamin Brodie once happened to touch his tongue with the end of a glass rod which had been dipped in the essential oil of bitter almonds; scarcely had he done so, before he felt an uneasy, indescribable sensation at the pit of the stomach, great feebleness of limbs, and loss of power to direct the muscles, so that he could hardly keep himself from falling. These sensations were quite momentary. In the cases now quoted, the rapid action of the poisons seems almost incompatible with the

idea of their absorption. Dr. Christison says, that two grains of conia, neutralized with thirty drops of diluted muriatic acid, being injected into the femoral vein of a young dog, stopped respiration, and with it all external signs of life, in two seconds, or three at farthest.

"In this case the death appears to have been too speedy to admit of the supposition that the effect occurred in consequence of the direct contact of the poison with the brain or spinal-marrow.

"Mr. Blake has met this argument by declaring that poisons are not instantaneous in their action, but that sufficient time always elapses between the application of a poison and the first symptom of its action, to admit of its contact with the tissue which it affects. Thus he found that, after half a drachm of concentrated hydrocianic acid had been poured on the tongue, eleven seconds elapsed before any morbid symptom appeared, and death did not occur until thirty-three seconds after the exhibition of the poison; and on repeating Dr. Christison's experiment, he found that fifteen seconds elapsed after ten drops of conia (saturated with hydrochloric acid) had been injected into the femoral vein of a dog, before symptoms of the action of the poison appeared; and death did not occur until thirty seconds after the injection. Now the time required for a substance to be absorbed by the capillaries, and diffused through the body may not exceed, according to Mr. Blake, nine seconds. So that the interval which elapsed in the preceding experiments, between the application and the effect, is quite sufficient to admit of the absorption and circulation of the poison.

"2. *The effects being disproportionate to the facility for absorption.*—Orfila says that alcohol acts with much less energy when injected into the cellular texture, than when taken into the stomach; and, as the power of absorption is greater in the former than in the latter part, he concludes that the remote action of alcohol must, in the first instance, be produced by the agency of the nerves. Opium, on the contrary, is supposed to operate by absorption, because it is more active when injected into the cellular texture than when taken into the stomach.

"This experiment requires repetition. Even if the result be as stated by Orfila, the inference drawn from it is by no means a necessary one. As alcohol coagulates the blood when mixed with this fluid, its absorption would be more active in the dilute than in the concentrated state. Now, the secretions and contents of the stomach may, by diluting the alcohol, promote its absorption.

"3. *The effects of some poisons being analogous to those of severe injuries.*—Thus, a tetanic state is produced by strychnia as well as by a punctured wound.

"As tetanus can be produced without the absorption of any thing (as when it arises from the laceration of a nerve), it is not necessary, it has been urged, to suppose this process in the case of strychnia. Mr. Blake has endeavoured to meet this objection by suggesting that, in the first case, the disease may arise from the propagation of some pathological state from the injured nerve to the nervous centres; for, were the symptoms the mere result of the local irritation of a nerve, we might expect, he observes, to produce them at pleasure, by merely irritating the nerve; but it is well known, he adds, that this is not the case. The latter part of this statement is not quite correct; for Dr. Marshall Hall says, that 'if one of the lateral nerves [of the decapitated turtle] be laid bare, and pinched continuously, the muscles of the upper extremities, as well as the lower, are forcibly contracted. This is, in my opinion, the very type of tetanus.'

"4. *The rapidity of action not being diminished, by increasing the distance of the brain from the part of the vascular system into which the poison is introduced.*—Messrs. Morgan and Addison found, that the woorara poison produced its effects, when thrown into the femoral artery, a few seconds sooner, than when introduced into the carotid artery. Now, if contact with the brain were necessary to the action of this poison, a longer time would be required in the former than in the latter case for the production of any morbid symptoms.

"Mr. Blake, however, asserts that in his experiments he found, that the nearer to the nervous centres is the part of the vascular system into which the poison is introduced, the more rapid is its action." 125.

Chap. VI. alludes to the parts affected by the remote action of medicines; and, in a practical point of view, this seems most important; for whether a remedy act by sympathy or by absorption, whether it alter the condition of the blood or pervade the structure of the organ—the *how*, in fact, it produces its effects, is, after all, of little moment to the physician, compared with the practical knowledge of the organ on which it uniformly acts. We have said Dr. Pereira *alludes* to the parts affected; for, in this chapter, he merely enumerates the different parts on which different medicines act. Mercury, for example, and alkalis he considers to act on the blood—opium, green tea, and alcohol produce their effects on the cerebrum—foxglove and tobacco diminish the force of the circulation—and so on.

The introduction however is not yet nearly completed. Dr. Pereira mentions in Chap. VIII. the circumstances both with reference to the medicine itself—its state of aggregation, chemical and pharmaceutical mixture—and with reference to the patient, sex, age, habit, and more especially his disease, which modify the actions of medicines, and he comments in Chap. X. on the different parts to which medicines are applied.

The last Chapter, XII., supplies the place of the useful remarks found under each head in works on materia medica, with the therapeutical classification. Dr. Pereira here defines and illustrates all the important therapeutical terms so continually employed, in reference to the actions of medicines, therapeutically considered. We need not bring these remarks before our readers. We shall only mention one new term made use of by our author. Dr. Pereira applies the term *liquefacient* to a subclass of evacuants, and thus defines it.

"Medicinal agents which augment the secretions, check the solidifying, but promote the liquifying, processes of the animal economy, and which, by continued use, create great disorder in the functions of assimilation, may be termed *liquefacients* (from *liquefacio*, I liquify)." 194.

Mercury, Antimony, Iodine, and the Alkalis are examples. The term, in fact, approaches in signification to our terms resolvent, alterative, or perhaps to the two combined. We leave it with the public to judge as to the necessity of its introduction.

And now we shall present to our readers two examples of the method pursued by Dr. Pereira, in the description of the individual articles of the Materia Medica.

Acidum Hydrocyanicum Dilutum.—This acid is a compound of carbon, nitrogen, and hydrogen. Dr. P. has already described these elements individually, and he has treated of the compounds of carbon and nitrogen with hydrogen. We are now introduced to the compound of carbon and nitrogen forming cyanogen, and to prussic acid.

"HISTORY.—The substance called *Prussian* or *Berlin blue* (*Cæruleum Borussicum* seu *Berolinense*) was accidentally discovered by Diesbach at the commence-

ment of the 18th century, and various conjectures were soon offered regarding its nature. In 1746, Dr. Brown Langrish published some experiments made with laurel-water in order to investigate its effects on animals. In 1752, Macquer announced that Prussian blue was a compound of oxide of iron, and some colouring principle which he could not isolate; and in 1772, Guyton Morveau concluded that this principle was of an acid nature. Scheele, in 1782, removed some of the mystery connected with Prussian blue, by obtaining *hydrous prussic acid* from it. In 1787, Berthollet ascertained this acid to be a compound of carbon, nitrogen, and hydrogen. In 1800 and 1802, Bohn and Schrader discovered it in laurel-water. Borda, Brugnatelli, and Rasori, first employed the acid in medicine, from 1801 to 1806. In 1815, Gay-Dussac obtained the acid in its pure *anhydrous* state, and explained its composition.

"SYNONYMES AND ETYMOLOGY.—It has been denominated *Prussic* (*Acidum Borrusicum*,) *Zootic* (*Acidum Zooticum*,) or *Hydrocyanic Acid:* the first name indicates the substance (Prussian blue) from which it was obtained, the second refers to its animal origin, and the third indicates its constituents, hydrogen and cyanogen (so called from κύανος, *blue;* and γενάω, *to produce;* because it is one of the constituents of Prussian blue.)

"NATURAL HISTORY.—Hydrocyanic acid is a product peculiar to the organized kingdom. It may be readily procured from many *vegetables*, more especially those belonging to the sub-orders *Amygdaleæ* and *Pomeæ:* as from Bitter Almonds, Apple-pips, the Kernels of Peaches, Apricots, Cherries, Plums, and Damsons; the Flowers of the Peach, Cherry-laurel, and Bird-cherry; the Bark of the latter, and the root of the mountain ash. It is said to have been also obtained from plants of other families, as from *Rhamnus Frangulo* and Ergot of Rye. In some of the vegetables now referred to, hydrocyanic acid does not exist ready formed, but is a product of the process by which it is obtained. This has been fully proved in the case of the bitter almond, and is inferred in other instances.

"This acid is rarely, if ever, found in animals. One of its constituents (cyanogen) has, however, been detected, in combination with iron, (forming Prussian blue) in the urine, the menstrual fluid, and the sweat; and with sulphur and potassium in the saliva. The greenish-blue discharge of some ulcers probably depends on the presence of Prussian blue. In one case I detected the presence of iron in this discharge. During the decomposition of animal matters, cyanogen is frequently generated: as when blood and carbonate of potash are calcined in an iron pot. It has also been stated, that when cheese is exposed to the action of water and the sun, it disengages ammonia, and if treated, in this state, by alcohol, yields traces of hydrocyanic acid" 429.

The preparation of the acid now follows. Dr. Pereira subjoins the four methods in ordinary use for obtaining it. The London and Edinburgh Colleges make it by the action of diluted sulphuric acid on ferrocyanide of potassium.

The re-actions of the elements of these ingredients are complicated, but the explanation is very much facilitated by the aid of the skeleton diagrams now so commonly used in works on chemistry. Dr. Pereira explains all his decompositions with these diagrams.

The second method (proposed originally by Mr. Everitt) is also directed in the London Pharmacopœia, viz. the action of hydrochloric acid on cyanide of silver.

The third method is exactly similar in principle to the second; but the bicyanuret of mercury is substituted for the cyanide of silver, and the bichloride of mercury is left instead of the chloride of silver.

The fourth method proposed by Dr. Clarke, and adopted by Mr.

Laming, is the action of *tartaric acid* on *cyanide of potassium*—we have no experience of this; but we should conceive, with Dr. Pereira, that "the trouble and expense of procuring pure cyanide of potassium, and the liability of the salt to undergo spontaneous decomposition," were very cogent objections.

Dr. Pereira now adds the *properties* of the pure and dilute acid.

"PROPERTIES. *a. Of Anhydrous Hydrocyanic Acid.*—Anhydrous hydrocyanic acid is a solid at 0° F. (some state at 5° F.,) having then the appearance of crystallized nitrate of ammonia; it readily melts, forming a limpid, colourless liquid, with an intense and peculiar odour; its taste is at first cool, then hot; at 45° its sp. gr. is 0·7058, and at 64½ is 0·6969. In this state it is exceedingly volatile: a drop placed on paper freezes by its own evaporation. It unites with water and alcohol in every proportion at 79° or 80° F. it boils, forming hydrocyanic acid vapour, which is combustible; and when mixed with oxygen, explodes. Two volumes of the vapour require two and a half volumes of oxygen gas for their complete combustion. The products are two volumes of carbonic acid gas, one volume of nitrogen, and one volume of aqueous vapour." 432.

"Anhydrous hydrocyanic acid undergoes speedy decomposition. Yet Dr. Christison says he has kept it unchanged for a fortnight in ice-cold water.

"*β. Of Diluted Hydrocyanic Acid.*—Diluted or medicinal hydrocyanic acid is a colourless, transparent liquid, having the taste and smell of the strong acid, but in a lesser degree. Heated in a tube, it gives off a combustible vapour."* 432.

The Composition of the pure acid is now stated, and the Strength of the diluted acid, according to the London, Edinburgh, and Dublin standards; and adds, justly enough, "the discrepancy in the strength of the acid ordered in the British Pharmacopœias, is greatly to be regretted. Most of the acid met with in the shops of London chemists, is stated by the label to be of 'Scheele's strength.' But as Scheele's process gave an acid of variable strength, this statement is by no means definite. A manufacturer of large quantities of the acid informs me he sells, under the name of Scheele's acid, a diluted hydrocyanic acid, which contains 4 per cent. real acid."

"PURITY.—Diluted hydrocyanic acid should be perfectly colourless. Decomposed acid is frequently, but not invariably, coloured. It should be vapourizeable by heat: this character shows the absence of fixed impurities. The presence of metallic matter is recognised by hydrosulphuric acid, which has no effect on the pure acid. If the acid strongly redden litmus, it must contain some other acid, most probably the sulphuric or hydrochloric. The presence of any foreign acid is easily determined by the *hydrargyro-iodo-cyanide of potassium*. This salt is easily formed by adding a concentrated solution of bicyanide of mercury to a solution of iodide of potassium; a precipitate of white or pearly crystalline plates of this salt is immediately formed. If a small portion of this salt be placed in diluted hydrocyanic acid, no change is observed unless some foreign acid be present; in the latter event the red biniodide of mercury immediately makes its appearance. For this test we are indebted to Dr. Geoghegan. Sulphuric acid may be detected by a solution of the salts of barium. 'Solution of nitrate of baryta occasions no precipitate' in the pure acid (*Ph. Ed.*;) but if

* An appropriate skeleton diagram here illustrates its combustion with oxygen.

sulphuric acid be present, it occasions a white precipitate (*sulphate of baryta,*) insoluble in nitric acid. Hydrochloric acid is recognized by nitrate of silver, which forms therewith white chloride of silver insoluble in boiling nitrid acid, whereas the white cyanide of silver is soluble in nitric acid at a boiling temperature. I would observe, that the presence of either of these acids is no further objectionable, that that it creates a difficulty in the determination of the strength of the hydrocyanic acid: while, on the other hand, it confers the advantage of rendering the hydrocyanic acid much less liable to decompose. The acid prepared from ferrocyanide of potassium will keep for years (Dr. Christison has had some unchanged for two years and a half, though it was exposed to day-light,) owing, it is supposed, to the presence of some sulphuric acid. Mr. Barry adds a little hydrochloric acid to all his medicinal hydrocyanic acid, in order to preserve it. As air and light hasten, though they are not essential to, the decomposition of the acid, they should be carefully excluded." 434.

Dr. Pereira now gives the tests for prussic acid; and the method of its detection in cases of poisoning. To the four tests—*odour—nitrate silver* and *boiling nitric acid—sulphate of copper, potash,* and *hydrochloric acid, sulphate of iron, potash,* and *hydrochloric acid*, Dr. Pereira adds another, *tincture of guaicum* and *sulphate of copper*. We should not be inclined to set much value on this last. With regard to the Prussian blue test, it is conducted thus:

"Add sufficient causic potash to the suspected acid to saturate it; then a solution of some proto- and sesqui-salt of iron: the common sulphate of iron of the shops, or the tincture of the chloride, answers very well, since both these preparations usually contain the two (*prot-* and *sesqui-*) salts of iron. A precipitate is thus obtained, which is liable to considerable variation in its colour, depending on the quantity of potash and the quality of the ferruginous salt employed; it may be yellowish brown, or greenish, or bluish. Then add dilute sulphuric or hydrochloric acid, when Prussian blue (ferrosesquicyanide of iron) will immediately make its appearance, if hydrocyanic acid were present." 435.

Dr. Pereira continues:—

"The formation of Prussian blue is thus accounted for. When potash is added to hydrocyanic acid, water and cyanide of potassium are generated. By the re-action of this salt on a proto salt of iron the proto-cyanide of iron is produced, while with a sesqui-salt of iron it forms sesquicyanide of iron. The two ferruginous cyanides, by their union, constitute the ferrosesquicyniade of Prussian blue." 435.

The action of the mineral acid might as well have been added. It redissolves the oxyde of iron thrown down by the potash; and thus, on the one hand, exhibits the blue colour of the ferrosesquicyanuret well-marked, when *hydrocyanic acid* is present; on the other hand, renders the solution perfectly clear, if the acid have been absent.

After showing the process for detecting the poison in organic mixtures, we arrive at the *Physiological Effects of Prussic Acid* on the organic kingdom.

In illustration of its poisonous action *on vegetables*, Dr. Pereira instances the facts of the stamens of the *Berberis Vulgaris*, and the leaves of the *Mimosa Pudica*, losing their irritability when their stems are immersed in the diluted acid.

In the animal kingdom—

"Experiments have been made with it on the following:—*Mammalia, Ass,*

Reptilia, *Amphibia*, *Pisces*, *Gasteropoda*, *Annelida*, *Crustacea*, *Insecta*, and *Infusoria*. The general effects are very similar on all classes, and consist essentially of loss of sensation and voluntary motion, with convulsive movements." 437.

He now considers its action on man.

"αα. *In small or medicinal doses.*—Small doses of hydrocyanic acid sometimes relieve certain morbid conditions (as of the stomach,) without producing any remarkable alteration in the condition of the general system. If the dose be cautiously increased, and its operation carefully watched, the following effects are usually observed:—a bitter but peculiar taste; increased secretion of saliva; irritation in the throat; frequently nausea; disordered and laborious respiration, (sometimes quick, at others slow and deep;) pain in the head, giddiness, obscured vision, and sleepiness. The vascular system is in some cases not obviously, but in others much, affected, though not uniformly; its action being sometimes quickened, at others reduced in frequency. In some instances faintness is experienced. Drs. Macleod and Granville have noticed salivation and ulceration of the mouth during its medicinal use.

ββ. *In poisonous doses: convulsions and insensibility* (Epilepsy?): *if death occur, it takes place slowly.*—Immediately after swallowing the acid, a remarkably bitter taste is experienced; this is soon followed by a sensation of faintness and giddiness, with salivation, and is succeeded by tetanic convulsions and insensibility; the respiration is difficult and spasmodic; the odour of hydrocyanic acid may be recognised in the breath; the pupils are usually dilated, though sometimes contracted; the pulse is small or imperceptible. When recovery takes place it is usually very rapid, and the whole period of suffering seldom exceeds half an hour." 438.

γγ. *In poisonous doses: death rapid with or without convulsions.*—In these cases the death is so rapid that, in the human subject, the symptoms have scarcely been observed. They are probably similar to those noticed in animals,—viz. imperceptible pulse, breathing not obvious, or there may be two or three deep, hurried inspirations, insensibility and death. Convulsions may or may not be present." 438.

After a little discussion on the two important medico-legal questions connected with the action of this acid—namely, the time at which it begins to operate, and the period in which it proves fatal, we are brought at once to the *post-mortem appearances*. They are,

"Glistening and staring expression of the eyes, but which, however, is not a constant phenomenon, since it was not observed in the seven Parisian epileptics: nor is it peculiar to this poison, for the same is observed after death by carbonic acid, and in other cases (Christison): the odour of the acid is oftentimes very obvious in the blood, brain, chest, or stomach: the venous system is usually gorged with blood, while the arteries are empty: the blood is, in many cases, fluid, dark, or bluish black, and viscid or oily: the vessels of the brain and spinal-marrow are frequently gorged with blood; and the cerebral ventricles sometimes contain a serous or sanguineous liquor; the lungs are, in some instances, natural—in others, turgid with blood: the internal lining of the stomach is sometimes red." 439.

Dr. Pereira adds:

"I have examined a considerable number of animals (principally rabbits) destroyed by hydrocyanic acid, and have always found the muscles to be powerfully affected by the galvanic influence: nor have I once met with a single case in which the heart had ceased to beat when the chest had been laid open immediately after death." 439.

This last fact seems of great moment. It shows clearly that Prussic acid does not palsy the heart; and argues much in favour of its destroying at once the *vitality* of the blood. Our author, however, will speak fully of its action in his next point of inquiry—the *modus operandi*. We shall not do him justice without transcribing the whole section.

"MODUS OPERANDI.—There are several interesting subjects of inquiry connected with the operation of hydrocyanic acid, which, as they are principally theoretical, I shall briefly notice under this head.

"*α. Local Action.*—Dr. Christison says that Robiquet's fingers became affected with numbness, which lasted several days, in consequence of their exposure for some time to the vapour of this acid. This effect would appear to depend on the local action of the poison on the nerves—a mode of operation which we are constrained likewise to admit in the case of some other narcotics. The alleviation of gastrodynia by hydrocyanic acid depends probably on this benumbing effect. Some of the local effects produced by hydrocyanic acid are those of an irritant: such are the acrid impression made by the vapour on the nose and mouth—the ptyalism—the vomiting and purging—and the redness of the mucous membrane of the stomach.

"*β. Absorption.*—That hydrocanic acid becomes absorbed, is proved by its having been detected by Crimer (quoted by Dr. Christison, p. 15), in the blood of animals poisoned with it, and by the odour of it exhaled by various parts of the body. The exhalation by the breath of the odour of the acid may sometimes serve to recognise the presence of the poison in the system.

"*γ. Are the remote effects of this acid caused by its absorption?*—In many cases the operation of hydrocyanic acid on the system is so rapid, and death so speedily follows the application of the poison, that doubt has been entertained of its action being dependent on its absorption. The principal arguments which have been adduced in favour of the agency of absorption are the following:—*first*, that the acid produces no remote effects when applied either to the nerves or brain: *secondly*, that applied to the tongue or stomach, it operates as an energetic poison, although the nerves of these parts were previously divided: *thirdly*, that if the acid be applied to a part where circulation is arrested, the operation of the poison is prevented: *fourthly*, the activity of the acid is in proportion to the absorbing powers of the part with which it is placed in contact: *fifthly*, a sufficient time always elapses between its application to the body, and the first symptom of its action, to admit of its operation by absorption.

"*δ. Organs affected.*—The parts specially affected by this acid are the brain and true spinal system. The pain in the head, the insensibility, and the coma, are evidence of the cerebral affection; while the tetanic convulsions depend on the disorder of the true spinal system. Marx mentions the following experiment performed by Wedemeyer and which shows the independent action of the acid on the spinal marrow: the spinal cord of a dog was divided between the last dorsal and first lumber vertebræ, so that the hind legs were completely paralyzed and insensible to mechanical irritants: hydrocianic acid was then introduced into one of the hind legs—in one minute symptoms of poisoning commenced, the hind as well as the fore legs were violently convulsed,—and in twelve minutes the animal was dead. The affection of the respiratory and circulatory system produced by hydrocyanic acid is probably only secondary; that is, is the result of the influence of this agent over those parts of the nervous system from which the respiratory organs and heart derive their nervous power. The insensibility

caused by hydocianic acid occurs too rapidly, in many cases, to be the result of asphyxia caused by paralysis of the muscles of respiration.

"2. *Condition of the brain and spinal marrow induced by this acid.*—The precise pathological condition of the brain and spinal cord of an animal under the influence of hydrocyanic acid, cannot be positively determined, and is, therefore, a matter of conjecture. Whatever it may be, it is probably identical with that which occurs during an epileptic paroxysm, and with that produced by loss of blood: for the essential symptoms (insensibility and convulsions occurring suddenly) are the same in all three states,—and ammonia has been found to relieve them. Now Dr. Hall has shown that the convulsion from hæmorrhage is spinal. Dr. Holst, Professor of Materia Medica in the University of Christiana, Norway, told me of a case of epilepsy which had been under his care, and in which it was observed that the pulse in one arm was always imperceptible during the paroxysm. On a post-mortem examination it was discovered that an anomalous distribution of the arteries existed,—so that this arm was supplied with blood by the vertebral arteries, which derived it, through the basilar artery, from the carotids. Now the cessation of the pulse during the paroxysm proved that the circulation through these vessels was temporarily interrupted. Does any similar interruption occur in poisoning by hydrocyanic acid?

"3. *Cause of death.*—In most cases the immediate cause of death is obstruction of respiration. In some instances it is stoppage of the heart's action. There are cases, however, in which the death is too immediate to be produced by obstructed respiration, while, on opening the chest, the heart is found still beating: this I have observed in experiments on rabbits with strong hydrocyanic acid.

"4. *Cumulative effects.*—Hydrocyanic acid is not usually regarded as a cumulative poison; but a case mentioned by Dr. Baumgärtner (quoted by Dr. Christison), as well as some other circumstances, seem to favour the reverse opinion." 441.

Uses of Prussic Acid.—The first and foremost complaint for which hydrocyanic acid is prescribed, is gastrodynia, with or without pyrosis, with or without vomiting. This needs no comment. But Dr. Pereira has found it useful in a painful affection of the bowels, analogous to the stomach-affection above mentioned, which he purposes to call enterodynia.

He has also seen it used with great success to allay vomiting and purging in severe forms of ordinary English cholera, when opium has completely failed. In Asiatic or malignant cholera it has occasionally appeared to be serviceable, and he has found it successful in checking the *diarrhœa* of *phthisis*, when logwood, chalk and opium had failed. These are its principal uses. Dr. Pereira alludes to its employment in genuine spasmodic asthma, and in whooping-cough, in the combination of Dr. Rhoe, with ipecacuan, and tartarized antimony, (powerful adjuncts) also in epilepsy, chorea, hysteria, tetanus and hydrophobia, yet without any eulogiums. In cancer, tic douloureux, and rheumatism, it is considered anodyne. As a lotion also, in impetigo, prurigo, and psoriasis, it is recommended by Dr. A. T. Thompson. As an injection in cancer of the uterus by Frisch of Nyborg, and in gonorrhœa by Schlegel, with advantage.

We pass on to our next example from the vegetable kingdom. Pursuing the natural arrangement of plants, Dr. Pereira commences with the

lowest forms of vegetable existence, the Cryptogamia or flowerless plants. He then treats of Endogens, the next perfect in organization, including, besides others, the following important natural orders—Gramineæ melanthaceæ—Liliaceæ—Smilaceæ—Iridaceæ—and lastly arrives at the most perfectly developed plants—Exogens.

These last include all the more important natural orders; and of each natural order, prior to the description of the particular plants, there is a distinct botanical description. Before describing *Senna*, for example, we have a description of the natural order *Leguminosæ*, condensed from De Candolle. Moreover, senna belongs to the sub-order mimosæ.

After the *History of Senna*, Dr. Pereira proceeds at once to its *Botany*. He describes the genus Cassia thus :—

"*Sepals* five, scarcely united at the base, more or less unequal. *Petals* five, unequal. *Stamens* ten, free, unequal; the three lower ones longer, the four middle ones short and straight, the three upper ones with abortive anthers. *Anthers* dehiscing at the apex. *Ovary* stalked, frequently arched. *Legume*, various. *Trees, shrubs*, or *herbs*. *Leaves* simply and abruptly pinnate. *Petioles* frequently glanduliferous. *Leaflets* opposite." 1598.

Dr. Pereira enumerates six species of senna-leaves seen by him at different times; three of which, viz. those of the cassia obovata, c. acutifolia, and c. elongata are the most known.

The following is the description of the cassia acutifolia.

"2. C. ACUTIFOLIA, *Delile*. *Stem* suffruticose. *Leaves* pinnate; *petiole* glandless; *leaflets* five to seven pairs, lanceolate, acute. *Legumes* flat, elliptical, naked on both sides, somewhat bent on the upper margin (Delile).—An *undershrub*, about two feet high. *Leaves* when young slightly silky or pubescent. *Flowers* yellow, in axillary racemes, at the top of the branches. *Petals* obovate. *Legumes* somewhat swollen by the seeds. *Seeds* six or seven in each legume. Egypt, in the valleys of the desert to the south and east of Assouan. Collected by the Arabs, and sold by them to merchants who convey it to Cairo." 1599.

After alluding to the *commerce* of *senna*, we arrive at its *description*.

"DESCRIPTION.—Senna (*folia sennæ*) has a peculiar, agreeable, tea-like odour, and a nauseous, bitter taste. Its colour should be bright and fresh. If largely mixed with extraneous matter, if it be much broken or very dusty it should be rejected. Boiling water extracts about a third of its weight. Proof spirit yields a brown—alcohol or ether a green tincture."

Each of the different kinds of senna have a distinct description superadded. Alexandrian senna consists of the leaves, flowers, and fruits of cassia obovata, and cassia acutifolia, together with the leaves, flowers, and fruit of a plant belonging to the natural order, asclepiadaceæ, the *cynanchum argel*. The best East Indian or the Tinnevelly senna is a very fine unmixed senna composed of the leaves of the cassia elongata. To those who are accustomed, nothing is easier than to select the argel leaves, flowers and fruits from the specimens of Alexandrian senna. The student, however, will find some woodcuts, which represent not only the common acutifolia, obovata and elongata leaves, and the legumes of these species of cassia; but also the argel leaves, flowers and fruit. There is one thing, however, we do not promise him; we do not promise that he will pick

the flowers of argel from senna, in quite such regular corymbs, as is represented.

"ADULTERATION.—Senna is not, to the best of my belief, adulterated in this country. The leaflets of *colutea arborescens* or *bladder senna* have, on the Continent, been occasionally intermixed. They are elliptical, regular, and obtuse. Their regularity at the base would at once distinguish them from the leaflets of *cassia obovata*." 1603.

"Argel leaves, mixed with a few leaflets of *C. acutifolia*, I have known to be recently sold as *picked* or *heavy senna* at a higher price. It was done rather from ignorance than fraud." 1604.

Dr. Pereira alludes to a real adulteration practised on the Continent, the introduction of the leaf of the *coriaria myrtifolia*. He has figured it as a three-nerved leaf, with a strongly-marked midrib, the two lateral nerves disappearing towards the summit. This leaf, as far as we are aware, is unknown in the English market.

Three *analysis* of senna are now given, and these are followed by the *chemical characteristics* of this drug. It is very remarkable, if true, that *cathartine*, the purgative principle of senna, contains no *nitrogen*.

"PHYSIOLOGICAL EFFECTS. *α. On Animals.*—In doses of five or six ounces it purges horses. Courten threw an infusion into the veins of a dog; it quickened the respiration, and caused vomiting. The animal appeared weak, was dull, and had no inclination to eat.

"*β. On Man.*—Regnandot injected half a spoonful of weak lukewarm infusion of senna into the left median vein of a young man affected with an herpetic eruption. The only effect produced was a slight temporary headache. Some days afterwards a spoonful was injected: in half an hour violent shivering and vomiting came on, which were followed by heat and purging. The febrile symptoms continued for several hours. Taken by the stomach senna acts as a sure and safe purgative. Its ill effects are nausea, griping, flatulence, and, at first, depression, afterwards excitement of the pulse. It appears to stimulate the abdominal and pelvic vessels, thereby having a tendency to promote the hemorrhoidal and menstrual discharges. It is one of the mildest of the drastic purgatives. Unlike scammony, gamboge, jalap, and most other drastics, it does not rank among poisons, even when given in large doses. It is distinguished from the saline purgatives by its stronger and more irritant operation, by the heat, gripings, and increased frequency of pulse, which attend its purgative action. From rhubarb it differs in being more powerful and irritant in its operation, in being nearly or quite devoid of any tonic operation. It acts more speedily and powerfully than aloes, and in a less marked manner on the large intestines. In its operation it appears to rank between jalap and aloes.

"The petioles and stalks possess similar properties to the leaflets. Formerly the griping quality of senna was ascribed to the stalks, but both Bergius and Schwilgué have proved the error of this notion. The legumes are much milder in their operation than the leaflets.

"Good East India senna is almost, if not quite, as active as the Alexandrian. Mr. Twining, after extensively trying it, declared it equal to the best he had ever seen. The obovate senna appears to be milder than the acute-leaved. The Senegal senna, before referred to, was found to possess less activity than ordinary senna. Part of the acrid and griping qualities of Alexandrian senna are referrible to the argel leaves, which, according to the observations of Rouillure, Delile, Nectoux, and Pugnet (quoted by Delile,) possess greater activity than the true senna leaves. Rouillure says they purge and gripe, and are used by the

Arabs of Upper Egypt, without the addition of senna. These effects might be expected from the known properties of the asclepiadaceæ (before referred to.) 'American senna is an efficient and safe cathartic, closely resembling the imported senna in its action, and capable of being substituted for it in all cases in which the latter is employed.'

"If infusion of senna be given to the nurse, the suckling infant becomes purged,—a satisfactory proof that the cathartic principle of senna becomes absorbed, and is thrown out of the system by the excretories. Furthermore, as purging results from the injection of infusion of senna into the veins, this cathartic would appear to exercise a specific influence over the bowels, independent of its local action on these when it is swallowed." 1606.

The *uses* of senna are naturally deduced from its physiological effects. The article is finished with the London, Edinburgh, and Dublin pharmaceutical preparations.

In dismissing this work, we are taking leave of one, the perusal of which has afforded us the greatest satisfaction. It is full on every point, and yet not prolix. The introduction on general pharmacology is excellent; and the whole arrangement of the special history of the materia medica exceedingly well conducted. We cannot commend the work too strongly. The student of materia medica will find it an invaluable addition to his library.

ELEMENTS OF PHYSIOLOGY. By *J. Müller*, M.D., &c. &c. Translated from the German, with Notes by *William Baly*, M.D., &c. &c. Part VI., containing *Mind*, *Generation*, and *Development*. London, Taylor and Walton.

ELEMENTS OF PHYSIOLOGY. By *R. Wagner*, M.D. Translated from the German by *R. Willis*, M.D. Part I. *On Generation*. London, Sherwood & Co. 1841.

PROFESSOR MULLER considers the subject of Generation under two distinct heads, viz. under that of homogeneous or non-sexual generation, and that of sexual generation.

In the *first chapter* is considered the multiplication of organic beings by the process of growth; and first in the case of *plants*. When we compare plants in their fully developed state with the same plants in their earliest condition, we see that during their growth their component organs become multiplied, and that parts, which in the very young plant exist singly or in small number, are in the full-grown plant exceedingly numerous. On a more attentive examination, however, we find that something more than a mere multiplication of the organs of a single individual takes place; and that, in fact, the full-grown plant consists of a system of individuals, or of a multiple of the vegetable organism, which constitutes the plant in its earliest condition; as is proved by the properties which parts of this compound system display. A branch of such a plant, separated from the stem and set in the ground, presents all the characters of the

parent organism, and continues to live, nourishing itself and increasing. Nor is this power of multiplying the vital force resident in the germ peculiar to plants. Animals also possess the same property. The young polype developed from the ovum or gemmule of a compound polypiferous animal is at first a single individual, actuated by a single independent will. But in proportion as this young creature grows, it becomes transformed into a multiple system of individuals, like that presented by a full-grown plant, and is then regulated in its movements by many distinct centres of volition.

Thus far our author has considered only those organisms which in their compound state, attained by growth, consist of a system of individuals not merely *potentially* but *actually*; the separate members of the compound system having each its proper structure and independent will.

"We now proceed a step further, and find animals which in form appear perfectly simple, and have only one directing will, but nevertheless are systems of parts endued with individual life, and capable of propagating the form and organization of the species. In these animals the component parts or segments undergo multiplication during the process of growth, and a certain number of them becoming separated, whether spontaneously or artificially, preserve the faculty of individual life. The parts thus separated were for a time subject to the will of the parent animal, and in that respect were mere members of its body; but when about to separate themselves from the rest of the system, they acquire a more intimate relation to each other, become actuated by a distinct will, and have, as it were, their own proper centre of action, even while they form part of the body of the parent worm. At length they become detached, and display free voluntary motion. The young individual thus produced consists at first of few constituent parts or members; grows, however, by the appropriation of new matter, and forms another compound system capable of dividing spontaneously or of being divided into several portions, 'potentially' endowed with individual life. For a time this multiple individual is subject to the influence of a single will, and is only so far a multiple animal as the parts which compose it have the capability of becoming independent individuals, which as yet they are not 'de facto.' Subsequently, the individual parts, though still connected, are actual independent beings."

When a nais has in the process of growth multiplied its organism, the portions capable of separating from the parent animal, and of becoming separate individuals, already have the form of a young nais; there being a repetition in the multiple animal of certain segments which the young and simple animal possesses only in small number. But an animal may in form possess none of the characters of a multiple of individuals, and yet be constituted of a number of parts capable of becoming independent beings, as, for example, the hydra, at the time when it is a simple polype animated by one will and destitute of sprouts. In this state, however, the polype is not a multiple of independent individuals, but it is really a multiple of all that is necessary for the development of a polype; for separated portions of its body grow rapidly, and acquire the form of perfect animals. It has been proved even by experiments, that whether the hydra be divided longitudinally or into transverse ring-shaped segments, or whether portions are merely cut out of their side, the separated fragments are in all cases transformed into perfect polypes. Hence it appears that portions of the body of a polype, the limits of which are undefined, contain, like

the leaves of plants, all that is essential to an individual of the species. In this respect the planariæ resemble the polypes. To be sure they never undergo multiplication during growth; so as to form a system of independent beings, each endued with a distinct will, but always remain, with respect to volition, simple animals; but yet when divided into eight or ten separate segments, each of these segments will manifest independent life. Nor yet are we to suppose that the hydræ or planariæ, more than other animals, are deficient in organization, that is, in the possession of organs and tissues. Wherefore, since separated fragments of a planaria or a hydra contain within themselves the power of forming an entire animal, it is evident that this formative power must reside in a mass of different structures, as muscular fibres, nervous fibres, &c., whence it follows, that an aggregate of animal tissues of different physiological properties may be animated with a force quite distinct from the specific endowments of the respective tissues.

"The cause which compels a particular portion of a hydra or planaria to the performance of a subordinate function, is the mutual re-action of its component organic matter with that of the entire organism, which is endowed with a centre of nervous action, or a brain. In this condition the primitive formative force of each part remains latent, and its organisation is subservient to the central influence of the organised polype. As soon, however, as the portion of organised matter of a hydra or planaria ceases to be in contact with the rest of the organism which has a centre of action, it becomes withdrawn from the influence of that centre; and then the tendency to individual organisation is manifested. In the process which ensues, the different tissues already formed within the separated mass probably lose their distinctive characters, and become all transformed into formative matter ('cytoblastema'), and germinal or formative cells; the elementary parts of the tissues of the new animal being subsequently produced by the transformation of those cells. For it is thus that the different tissues of the embryo are developed."

The same, or very nearly the same law, prevails in plants. As long as the leaf is connected with the branch, its faculty of reproducing an entire individual of the same species is kept in a latent condition, in consequence of the mutual re-action of the leaf, as an organ of the plant, with the entire branch or plant itself. But if this mutual reaction is arrested by the dissolution of continuity between the leaf and the stem, the organisation which the formed received for a special purpose in the general economy becomes useless, and the latent power of reproduction manifests itself by the formation of a bud, or the germ of a perfect plant.

We now come to the *Second Chapter*, which treats of the

MULTIPLICATIONS OF INDIVIDUALS BY THE DIVISION OF PERFECTLY DEVELOPED ORGANISMS.—FISSIPAROUS GENERATION.

Organic beings in the fully-developed condition being virtually multiples of the germ which produced them, they are capable of multiplication by mere division, without the formation of new germs. This may be the result either of the artificial interruption of contact and organic re-action between the different parts of a body, or of spontaneous division.—

1st. *Artificial fissiparous generation.*—Artificial division produces absolute interruption of continuity between parts which have already undergone perfect organisation, and at the same time are equally endowed with vital force; and it thereby causes the force resident in each part to assume an active state, so as to produce a new organism. Thus polypes may be divided in any direction, and the separated portions will develope new individuals. On the contrary, spontaneous division takes place in certain determinate directions. Multiplication of all plants, and of many of the lower animals, may be effected by artificial division. Branches, twigs, or sprouts, separated from a tree continue to live and keep up the species, when planted or engrafted. Such, however, are not examples of true multiplication by division, effected independently of previously-formed buds, as cuttings of plants are generally provided with fully-formed leaf-buds.

Multiplication by artificial division in animals is most likely to be successful, when the organism consists of a succession of parts of similar structure, the number of which increases during growth. This condition, however, is not indispensably necessary, as in the case of Hydræ and Planariæ multiplication may occur, no matter in which direction the division may be made. There are three modes in which artificial division may be made.

1. *Transverse division.*—This succeeds chiefly when the organism has a linear and parallel development, as in plantsand worms (Annelida and Entozoa.) 2. *Longitudinal division.*—When Hydræ are divided longitudinally, the cut edges quickly apply themselves one to another, so as again to form a tube. 3rd. *Division in all directions.*—It is chiefly in the inferior plants, as the lichens, and in the hydræ amongst animals, that this sort of division still admits of the reproductive power.

2. *Spontaneous fissiparous generation*—This generally takes place either transversely or longitudinally, or in both directions at the same time. It is only in animals that this mode takes place to any extent, and hence Ehrenberg employs it to assist in determining, in doubtful cases, whether simple organic beings belonged to the animal or vegetable kingdom. This kind of generation is very common among the infusoria, whilst the higher animals never multiply by spontaneous division. The cause of the spontaneous division is the striving of the organism, rendered virtually a multiple by the process of growth, to concentrate the sway of the organic force upon smaller masses.———The occurrence of spontaneous division in the vegetable kingdom is still a subject of dispute. The only modes of increase in plants, according to Ehrenberg, are elongation and the formation of buds; the cases of apparent division depending merely on the separation of buds or gemmules. Meyer, on the contrary, maintains the frequent occurrence of this mode of increase in the case both of entire plants and of the cells of plants.

CHAP. III. contains the PROPAGATION OF THE SPECIES BY BUDS.

Our author thus accounts for the formation of buds—

"A portion of the substance of an organised being, which is superfluous for its individual life, separates itself in an undeveloped state of organisation from the organism of that being, so far as to assume a special individuality of life, without, however, losing its organic connexion. From the germ thus produced, the special organisations of the species is subsequently developed in the form of a new individual, which may either retain its organic connexion with the parent trunk, or become detached." A bud originally consists merely of the primary elements of all organisation, namely, cells, and contains even these in proportionally small number. The buds of plants are masses of ordinary vegetable cells. "The ovum is distinguished from the bud not only by the circumstance of sexual influence being necessary for its development, but also by its inability to undergo further evolution while forming part of the parent organism, and by its being insulated from the parent plant by distinct membranes. ..... Any circumstance which arrests the general growth of the organism at any point, or only interrupts the continuity of the cellular tissue, may determine the formation of buds in plants.

1. *Formation of "Buds," or "Gemmæ," in Plants.*

A. *Buds of the Inferior or Non-vascular Plants.*—These buds of plants of low organisation, consist partly of aggregates of cells, partly of single cells. In the moss and liver-wort tribes, they are of the former kind, whilst in the articulated conferæ and filiform fungi they are single cells.

B. *Buds of the more highly-organised Vascular Plants—Axillary and Terminal Buds.*—These are either formed in the axes of the leaves, or at the extremity of the stalk or stem.

2. *Gemmiparous Generation of Animals.*

In the animal kingdom the propagation by the formation of gemmæ or buds is met with to the greatest extent in the class polypifera, and less frequently in the infusoria. The facts with which we are acquainted, relative to the development of the animal tissues, place it beyond doubt that the buds developed by animals, like those of plants, are at first mere masses of cells, and that these cells not merely increase in number, but undergo a special arrangement and transformation, so as to produce the different tissues of the body.

Theory of Non-sexual Generation.—The production of new organic beings from individuals already existing, may be conceived to take place by either of the two following processes. It may be the result of the entirely new formation of germs by the parent organism; or it may be effected by the mere unfolding or setting free of germs contained within the parent, from the commencement of its existence. The latter view is called the "evolution-theory;" and, according to it, the first created embryos of each species must contain within themselves, as it were, in miniature, all the individuals of that species which shall ever exist. Opposed to this theory is the "Epigenesis," according to which existing organisms do not contain the germs of future individuals, encased within them *ab initio;* but each new germ is an entirely new production of the parent organism. The evolution theory is now completely refuted.

Sexual Generation.—Here the germs, though endowed with the power of propagating the distinctive properties of the genus and species, and even of the individual, are incapable of undergoing their destined organization, until acted on by the semen, which itself only propagates the peculiarities of the genus, species and individual only by its influence on the ovum. The semen and ovum are sometimes generated in different individuals, in which case, fecundation is effected by the concurrence of the two sexes. Sometimes both semen and ova are formed in different organs of the same individual, as in hermaphrodites. Hence, dualism of sex does not necessarily involve dualism of the individuals, as sexual generation, as well as multiplication by buds and division, may be effected in a single individual. In hermaphrodite animals fecundation is effected either by the concurrence of two or more individuals or by each individual independently.

"In the former case two individuals either fecundate each other simultaneously, the male organ of each impregnating the female organ of the other, as in many mollusca and worms: or only one individual is impregnated in each act of copulation, the sexual organs being so placed that mutual impregnation is impossible, as in the genus Helluo. In this animal fecundation is effected by the concurrence of two individuals; but while one introduces its penis into the other, it does not itself receive the penis of the latter. In such cases, however, reciprocal impregnation is sometimes effected by the union of several individuals in a series, so that *a* is impregnated by *b*, *b* by *c*, *c* by *d*, and *d* by *e*. The last link of such a series is not fecundated, whilst the first does not fecundate."....." In those hermaphrodite animals, where fecundation takes place in each independently, it is generally effected by the semen finding its way to the ova within the body of the animal, as in the Radiata, according to Ehrenberg, and in the Distomata, according to Siebold. But in some cases the two kinds of sexual organs are repeated several times in the articulated body of the animal, and then two parts of the same animal may be bent towards each other and act respectively as male and female. It is not rare to find two tapeworms united and impregnating each other reciprocally."

No instance is observed of normal hermaphrodism in the Articulata and Vertebrata. The Infusoria, Radiata, Echinodermata and Annelida, are generally hermaphrodite, as are also the Polypi for the most part. The class Entozoa includes genera devoid of sexes,—hermaphrodites and genera with the sexes in distinct individuals. Some Entozoa, however, namely all the Nematoidea of Rudolphi, have the sexes on distinct individuals. Some worms, also, which do not belong to the class Entozoa, have the sexes distinct, and in that resemble the Nematoid Entozoa. The Planariæ are hermaphrodite, as are all the Annelida. Insecta, Arachnida, Crustacea, and all Vertebrata, have the sexes distinct; and the erroneous assertion that hermaphrodite genera, or genera having only the female sex, exist amongst them, has arisen from the superficial observation of the general similarity of form which the sexual organs sometimes present, for example, in many fishes; or from the comparative rarity of the individuals of one sex, for example, of the males in the genus Apus.

"In these classes, when the sexes are distinct, the individuals may be either male, female, or of no sex, though more correctly speaking, the individuals of the latter kind are unfruitful females, or at least females arrested in their development, since they contain imperfect ovaries. Individuals of this third kind occur in several genera of insects, as Bombus, Apis, and Formica. Those of the bee-

kind are called working-bees. The unfruitful ants are destitute of wings, and are directed by their instinct to protect and nourish the larvæ. The imperfect females or working-bees of the genus Bombus are not indeed incapable of pairing; at least some of those which come out of the larva state in the Spring do, according to Huber, pair with the males of the same generation; but they produce only males. These latter males alone are destined to fecundate the proper or perfect females, the brood of which forms a new colony. Amongst the true bees, Apis mellifica, the working-bees are smaller than the perfect females, though they resemble them in many respects. The working-bees are barren; but they are rendered fruitful if, while in the larva state and very soon after their escape from the egg, they receive a particular kind of food, namely, that destined for the nourishment of the queen-bee; and if they are at the same time placed in a larger cell, they acquire all the properties of the queen-bee. If, however, after having received the food proper for the queen-bee, they are placed in a small cell, they produce only males, and are distinguished from the perfect female by their smaller size. The working-bees, therefore, are females, the ovaries of which, in consequence of the nature of their food during the larva state, have remained undeveloped, and which, at the same time that they have suffered this imperfect evolution, have received special instincts. A swarm of bees consists of about fifteen or twenty thousand working-bees, six or eight hundred males, and a single perfect female."

Sexual Organs.—These are divided in animals, into *germ-preparing organs*—the testes and ovaries, which are essential, and always present; *transporting or efferent organs*, the vas deferens and oviduct; and *emitting organs*, penis and vagina, which at the same time serve as implements of sexual intercourse. The essential sexual organs, however, which are universally present, are the formative organ, the testis or ovary, and the efferent apparatus, the vas deferens, or oviduct. The sexual organs of both sexes present two perfectly distinct types, characterised by the relation which the formative and efferent organs bear to each other. In one type the efferent organ has the place of a true efferent duct, its walls being continuous with those of the cavities of the formative organ; in the other, the two essential parts of the sexual organs are wholly unconnected, and the ovum or semen first makes its way through the parietes of the formative organ into the abdominal cavity, and escapes thence by a special canal. The product of the formative organ may in this case either fall free into the abdominal cavity before making its way out by the efferent canal, or it may be at once received from the ovary or testis into the open end of the tube which is in the neighbourhood. The male sexual organs of all invertebrata, and of by far the greater number of the vertebrata, are formed after the first type; such is their form in man, mammalia, birds, reptiles, amphibia, and most fishes. The female sexual organs are less frequently formed after this type. The male sexual are seldom formed in accordance with the second type, in which the efferent duct opens directly out of the abdominal cavity, and has no communication with the testis. They never have this form in the invertebrata, and among the vertebrata, only in some few fishes. The female sexual organs are rarely found after the second type among the invertebrata; whilst in vertebrate animals, on the contrary, this type is the prevailing one; the only exception to it being in osseous fishes.

"The simplest form of the female efferent organ, when it is distinct from the

ovary, is found in the Cyclostomata, in eels, the Cobitis tænia, and in the Salmonidæ; in which fishes it is a simple opening leading from the abdominal cavity to the exterior. . . . . In the sharks and rays, reptiles, amphibia, birds and mammalia, the short efferent canal of the Cyclostomata is extended into a long tube—the oviduct. The end of this tube, which opens into the abdominal cavity, sometimes lies close to the ovary, as in man, mammalia, and birds. (*Müller* 461.)

"The general consideration of the morphology of the human organs of generation, show us certain relations which serve to elucidate many physiological phenomena. What we learn, admits of application, and furnishes us with analogies in reference to the same system through the whole of the series embraced by the animal kingdom. The *testicle* is composed of *tubuli seminiferi*, canals of great tenuity, which are everywhere copiously surrounded by blood-vessels. The tubuli anastomose with one another in loops. When unravelled from the tangled skein, which they form naturally, they constitute a canal of the delicacy and diameter of a sewing thread of more than a thousand feet in length; the amount of secreting surface is consequently very considerable. The tubuli unite into a variable number of excretory ducts, which pass into a thicker convoluted and looped tube, the *epididymis*, which, in its turn, terminates in a simple contorted canal, the *vas deferens*, which, at its terminal extremity, is provided with a diverticular appendage, the *vesicula seminalis*. This last appendage seems to serve partly as a reservoir for the spermatic fluid, partly as an organ of secretion; it is not found in many mammalia. The *prostate* and *Cowper's glands* are secernent organs, the clear viscid secretion of which consists of a transparent liquid intermixed with flocculi and granules which are mostly either normal or altered epithelial cells. The *penis* is a highly vascular organ, copiously supplied with nerves which, in virtue of a peculiar and not yet perfectly understood mechanism of its blood-vessels, receives upon occasion such an afflux of blood, that it enlarges and stiffens, or undergoes erection, by which it is fitted to penetrate into the female vagina. The mucous or internal coat of the seminal vessels is furnished with a flattened cylindrical epithelium, which is continued into the vas deferens; the epithelial cells of the vesiculæ seminales, which are tesselated or united in the manner of a pavement, contain nuclei of considerable size, and, farther, a quantity of granular matter."

"The *ovaria* of the human female have a very compact and solid stroma; each ovarium contains about fifteen fully-formed Graafian vesicles, in which the very small ovula (measuring from the 20th to the 30th of a line) are imbedded in the manner already described; the Fallopian tubes, as well as the uterus, contain muscular fibres, which have the histological (structural) character of those of involuntary muscles; the *vagina* is narrow at its orifice in the virgin, and partially closed by the *hymen*, which, however, leaves an opening of about half an inch in width superiorly; the *clitoris* is small; the mucous follicles situate between the labia and in the vagina secrete a fluid of a peculiar greasy odour. The mucous membrane between the labia pudendi, and covering the hymen and vagina to the middle of the cervix uteri, is covered with a tesselate epithelium; from the point indicated this is replaced by a cylindrate epithelium, which is continued through the tubes to the edges of their fimbriated extremities, where it passes into the tesselate epithelium of the peritoneum: the epithelial cylinder have similar nuclei, and carry cilia the $\frac{1}{300}$th of a line in length. In the mammalia, where the structures are all essentially the same as in man, the cilia may be seen many hours after death in rapid motion. After every menstrual period, certainly after every conception, the cilate epithelium is thrown off and reproduced; the epithelium of the vagina is always in a state of copious desquamation. The cilate epithelium is wanting before puberty, and after the period of child-bearing is past: in animals it only makes its appearance when they have attained the age at which they can engender." (*Wagner*, 59.)

PHÆNOMENOLOGY OF THE GENERATIVE ACT.

Encounter of the Generative Elements.—Certain questions require to be solved before a closer insight into the nature of the generative process can be obtained. The chief of these is—Must the generative elements which are severally prepared in the male and female sexual organs come into actual contact to produce their peculiar effects? and the answer being in the affirmative, how is this contact accomplished? In order to solve this, it becomes necessary to turn to the remoter circles of organic nature. In the vegetable kingdom the occurrence of an intimate material contact between the pollen granule with its fovilla, and the nucleus of the ovum, has been demonstrated; it is only when this contact is accomplished, that an embryo is evolved. Other facts and observations go to confirm this same matter. With respect to what takes place in the interior of the female organs of generation in the higher orders of vertebrate animals. Direct experiment has now proved the presence of spermatozoa in the interior of the female sexual organs after the access of the male. Spermatozoa may be found in the recently dead bodies of almost all animals that are frequently in heat, and produce several litters in the course of the year.

Dr. Bischoff, of Heidelberg, has found spermatozoa alive and active in the vagina, in the uterus, through the whole length of the tubes and between their fimbriæ, and finally in the sac or capsule which the peritoneum forms around the ovary, in a bitch after an encounter with the male.

The necessity of immediate contact of the spermatic fluid with the ova has been further proved by experiments on artificial impregnation. The same thing is proved by experiments of an opposite kind, in which the male sperm is prevented from reaching the ova: thus the ova of the frog and of fishes, unless brought into contact with the sperma of their several males, remain unfruitful.

In some of the lower vertebrata the ova of the female are extruded before fecundation has taken place; therefore the separation of the ova from the place of their formation is not connected with their fecundation. In such cases the extrusion may be considered a consequence of the excitement arising frow sexual intercourse. Among mammalia and man, however, the rule seems to be, that no ova are detached from the Graafian vesicles unless fecundation has taken place. Hence the improbability of the opinion according to which the product of the ovary, even in cases where fecundation is accomplished internally, is cast loose to meet the sperm. The grounds for believing that the fecundation of the ovum takes place in the ovary are as follows: 1st. The fact of the semen penetrating to the ovary. 2. The circumstance that the ova of birds, and also of mammalia, advance to maturity partially and in succession, and are also detached from the ovaria in the same manner, and that the fecundated ova in different families of the mammalia first make their appearance in the uterus after the lapse of a certain interval of time from the last visit of the male, an interval often so great as to render it improbable that the

semen continues accumulated in the uterus during its course. In rabbits, ova are usually found in the cornua of the uterus on the third day after effective coitus; in the dog, and it would appear in the human subject also, the ova do not enter the uterus before the eighth day. 3. The occurrence of cases of extra-uterine conception, which are by no means infrequent either in the human subject or among animals, speak loudly for the impregnation of the ova in the ovary. 4. If the oviducts, or Fallopian tubes be tied or divided in animals immediately after sexual intercourse, no development of ova follows.

In man and the mammalia penetration of the female organs of generation by the male organs is not necessary to impregnation; it is enough that the male sperm be simply so thrown or introduced into the female organs, as that it may by possibility reach the os uteri. In the case of man there are numerous cases which go to prove that fruitful intercourse may take place without actual intromission; thus, men with malformation of the penis,—with hypospadias and epispadias of the worst kind; men who have had the penis partially amputated, in whom but a very imperfect coitus could take place, have all proved themselves capable of engendering.

With respect to the conditions necessary for fecundation as regards the quantitative and qualitative relations of the sperma to the ovum, and the reciprocal influence of these upon one another, the principal are—1st, that the ovum possess a certain maturity of its elements, especially of its yelk. 2. The sperma must be recent. 3. The quantity of the sperma seems to have but little influence on its fecundating power. 4. The sperma must contain spermatozoa.

PHENOMENA ACCOMPANYING THE GENERATIVE ACT.

Besides the essential phenomena, of impregnation, there is a series of accompanying phenomena, reflections, as it were, in other organic systems, which play a secondary part in the generative act. To this series may be referred those occurrences which have their ground in a participation of the nervous system, and which accompany, in an especial manner, the sexual act. The nerves of common sensation appear to be always in a state of high excitement during the sexual act; an intense feeling of enjoyment is experienced, which reaches its height at the instant of the emission or ejaculation; this ejaculation is itself a reflex-action, excited by irritation of the sensitive nerves of the penis. It is the result of two movements; namely, of the persistent contraction of the organic muscular fibres of the visiculæ seminales, and of the repeated periodical contraction of the animal muscular fibres of the ejaculator seminis and other perineal muscles. In saying that the act of emission is a reflex action, it is understood that the sensory nerves of the glans penis transmit a peculiar sensation to the brain and spinal cord, and these reflect the impression upon the corresponding muscular parts of the genital system: the scrotum is drawn up tight round the testicles, the vesiculæ seminales and prostate are compressed by the levatores ani, and the spasmodic rhythmical contractions of the perineal muscles, particularly the bulbo-cavernosi, effect the vigorous ejaculation of the spermatic fluid. This occurs only during the

complete erection of the penis, by which it is fitted to penetrate, more or less, into the vagina.

In the two sexes, the act of coition is attended with pleasurable sensations, but their respective share in the act is different. In the female, the sense of pleasure seems chiefly to be excited by friction of the labia externa and clitoris, which are in a state of turgescence or erection; this excitement, as in the male, often reaches such a degree of intensity as to induce a kind of syncope. The impression made is also reflected on the nervous parts of the internal organs of generation, one effect of which is probably dilatation of the os uteri for the reception of the spermatic fluid. In the female, however, there is no expenditure of nervous power, no energetic rhythmical muscular contractions, when the venereal excitement has reached its height, and no emission of semen; but merely an increased secretion of mucous from the mucous follicles of the vagina, excited by the impressions on the sensitive nerves of the female sexual organs, and serving to lubricate the passage. The man feels exhausted after the act; the woman does not. Whence it may be inferred that the sensitive excitement of the woman is neither so rapidly rendered intense, nor so rapidly depressed, as that of the man: this conclusion accords with the fact, that women bear frequent sexual intercourse better than men, and are much less frequently injured by sexual excess.

IMMEDIATE CONSEQUENCE OF SEXUAL INTERCOURSE AND IMPREGNATION.

The most immediate consequence of the sexual act, in oviparous animals is the separation of the ova from the ovarium; among some of the lower animals this happens even during the act; in other instances it occurs later, as among insects, birds, mammalia and man. The stimulus of the intercourse is felt by the ovary; in the ripe ova, fecundated or fit for fecundation, the germinal vesicle disappears.

How this happens, whether from rupture or other causes, is not easily determined. It occurs, or may occur, however, before positive fecundation, or contact of the semen has taken place. In the mammalia the separation of the ova from the ovary seems to be dependent on the act of impregnation. It has, it is true, been stated, that cicatrices of the ovaries, resulting from the escape of ova, have been seen in the bodies of virgins; this, however, is not an ordinary occurrence. Generally, it is only after a successful union of the sexes, that one or more Graafian vesicles are found turgid. At a later period, after coition has taken place, the turgid and vascular vesicle of De Graaf bursts, and the ovulum is received into the Fallopian tube. These results of a fruitful union of the sexes, the change in the condition of the ovary, the dehiscence of the Graafian follicle and escape of the ovulum, are now known to be consequences of the direct action of the semen on the ovary itself.

The way in which the ova are transferred from the ovary to the Fallopian tube or oviduct is not very accurately known. In mammalia and birds the proximity of the ovary to the infundibulum of the Fallopian tube must, to a certain extent, facilitate the entrance of the ovum into the latter; but even here there is a phenomenon, as yet unexplained, in the Fallopian tube applying its infundibulum, or fimbriæ, at the time of impregnation, not

merely to the ovary, but exactly to that part of it at which there is an ovicapsule on the point of bursting. It is still more difficult to explain the passage of the ova into the Fallopian tube in those animals in which the infundibulum of the tube lies at a considerable distance from the ovary, as in the amphibia, and sharks and rays.

The changes which precede the expulsion of the ovum from its capsule, and which the capsule afterwards undergoes, are the following: Both in oviparous animals and in mammalia the posterior part of the capsule swells before the escape of the ovum; but in mammalia this tumefaction is much greater than in other animals, and the swollen capsule appears very vascular, and is filled with a brownish fluid, even before the ovulum has left its cavity. In consequence of this change the contents of the capsule are protruded against its outer wall, which has become thinner, and now projects with the ovulum beneath it in a hemispherical form above the surface of the ovary and thickened follicle. An aperture, the stigma, is then formed at the most prominent point. Immediately after the escape of the ovulum, the cavity of the follicle, or Graafian vesicle, appears very small; in a short time it becomes quite filled with a glanular mass and a kind of wart is developed in the site of the former opening. This disappears and the altered follicle remains with the form of the round corpus luteum.

The semen may be supposed to effect fecundation in two ways; either by acting indirectly on the ovum through the medium of the organism, or by acting directly on the ovum. It is now proved that fecundation, following the union of the sexes, results from the direct action of the semen upon the ovum. It is equally certain that fecundation does not depend on any influence of the entire male organism, but on the semen alone. Hence the essential cause of fecundation, wherever it takes place, is not any influence of the male organism on the female, but the action of the semen itself on the female germ.——The part which the spermatozoa play in the fecundating process is not altogether very clear. Do they serve merely to increase the sphere of action of the fertilizing matter, as insects, carrying the pollen, aid in the fecundation of plants, or do they themselves contain the essential fertilizing principle? We would refer the reader to Dr. Barry's ingenious observations on this interesting point of physiology.

Superfœcundation or Superfœtation.—With respect to man and the mammalia with fruitful coitus the generative act is closed, and its end accomplished. The rule is, that as soon as ova have been cast loose, the heat ceases in female animals: bitches will not then suffer the approach of the male. In the human female, however, the sexual disposition appears rather to increase during the first weeks after conception has taken place. If one or a first fruitful connexion be followed shortly afterwards, and *before the formation of the decidua*, by a second, in some rare instances *superfœcundation* may ensue. The only cases of superfœcundation that can be relied on, are those in which a woman has had connexion with two men of different races shortly after one another, and has brought twins into the world, a circumstance of which several instances are on record. Negresses have produced a mulatto and a negro at a birth: they had connexion with a European and a negro shortly after one another. Once the decidua is formed and the ovum has reached the uterus, fruitful intercourse

is no longer possible, and the cases of *superfœtation* which have been admitted under these circumstances are physiological impossibilities. The cases described as cases of superfœtation are all referrible to twin conceptions, in which one of the fœtuses has perished at some anterior period of the pregnancy, and has been more or less perfectly preserved.

We shall here close our analysis of and extracts from these two valuable contributions to medical science. Professor Müller's work has already received the impress of approbation in preceding Numbers of this Journal —it is, in fact, the most complete work we now possess on the subject; we have not had, until the present occasion, an opportunity of noticing Wagner's work; from what we have as yet seen of it, we consider it an excellent book. From the very great simplicity of its arrangement, and the clearness of its style, we are much inclined to think that it will be the favourite, as well with the student as with the practitioner. Dr. Willis already so favourably known to the profession for several excellent original works on practical subjects, more especially for his valuable work on diseases of the urinary organs, has now an additional claim on his professional brethren, both for his elegant translation of Wagner's work, as also for the excellent annotations which he has added to it.

Periscope;

OR,

CIRCUMSPECTIVE REVIEW.

"Ore trahit quodcunque potest, atque addit acervo."

Notices of some New Works.

Ueber die Abhängigkeit der Physischen Populationskräfte von der einfachsten Grundstoffen der Natur; mit specieller Anwendung auf die Bevölkerungs-Statistik von Belgien, von Dr. *Ferdinand Gobbi.* Leipzig and Paris.

On the Dependence of the Physical Population-powers on the Simplest Elements of Nature; with Special Application to the Population-statistics of Belgium. By Dr. *Gobbi.*

Before we had waded through the first page of the Introduction to this work, we were forcibly reminded of the cyclical poet mentioned by Horace, who commenced his poem on the Trojan war with an account of the eggs laid and hatched by Mother Leda, and one of the chicks of which was the unlucky Helen, "causa teterrima belli." Dr. Gobbi commences his work, the avowed object of which is to point out the connexion between the physical population-powers of the earth and the simplest elements of Nature, by a very detailed and elaborate account of what is now called the *Nebular Theory of the Universe*, a theory which, if we mistake not, had its origin in the celebrated hypothesis of Laplace; according to which, all the planets, now constituting the Solar System, were formed out of a very thin, luminous, and widely-extended atmosphere, which surrounded the body of the Sun, and which, together with him, revolved on an axis.

The connexion between such an origin of our own little planet, the earth, and its powers of maintaining and propagating human existence, does not, to say the least, appear very striking at first sight.

To those, however, who may feel disposed, and have sufficient time, to wade through this rather heavy, and certainly abstruse subject, a subject, moreover, for the due understanding of which, no small degree of imaginative exertion is required, such connexion will not appear quite so improbable. For our parts, however, we must decline attempting any thing like an analysis of this very profound work; it would, indeed, be quite out of place in the pages of a Journal, the prominent character, and legitimate object of which has ever been the discussion and elucidation of matters more immediately connected with practical medicine. We shall, in the meantime, present our readers with some of the more important and practical results deduced from the principles laid down in it.

The author divides his work into three grand Sections, the first of which treats of the *Action of the Atmospheric Water on the entire Process of Organization.* This section of the work is subdivided into five chapters. In the first is considered—

The Influence of the Atmospheric Water on the Assimilation of Food in the First Passages.

Our author sets out with the hypothesis of a *unity of life* which pervades the entire universe; he says, that we can account to ourselves for the existence of the universe in no other way, than by supposing a single fundamental power, *one life*, pervading all the bodies which constitute the universe, and extended to us. All the elements of these bodies we must conceive to be formed after the same type, only that this fundamental power, this life, imparts to each different qualities, according as it presents itself in them in a simple or compound form. He next divides the bodies which present themselves on the surface of our earth into two grand classes or groups, the one containing unorganised and the other organised beings, and points out the unbroken, uninterrupted chain which connects these two classes. In illustration of this same principle he adduces the Nullipori and Lithophytes, as the connecting link between the animal and the unorganised kingdom, and also the very close affinity of the Algæ, Tremelli and Ulvæ to Zoophytes and Polypi. So striking, he says, is the homogeneity of these two kingdoms, that Sponges and Tremelli are considered by some as plants, and by others as animals. He further says, that all the marks of Heterogeneity between organised and unorganised substances only serve to indicate a closer concatenation and a more intimate connexion, which is not only not incompatible with the idea of a single life of the universe, but is even strengthened by it; for, he says, until the individual elements of a body have received from the universe a certain degree of antithesis, which is always the consequence of a somewhat higher state of development, such a body cannot become a participator in that principle, which should be capable of uniting its individual fractions into a self-subsisting whole, and of imparting to it a substantial form, that principle, in fact, which enables it to convert foreign substances into its own nature, and of forming them into consentient organs, co-operating for one and the same end. We shall not here enter into all the details of our author's reasoning, but shall state the conclusion to which he comes, viz. that organic beings possess the power of assimilating to themselves heterogeneous substances, and also that their existence depends on the possibility of their changing the peculiar qualities of foreign bodies, so that they may be converted into nutriment for themselves.

The principle of unity, above alluded to, in the entire kingdom of nature, establishes it accordingly as an indispensable condition, that every body in nature, according to its different position, must make use of those placed beneath it in organic dignity for its own support, just as itself is marked out for the reparation of all others which are placed above it in organic development. But all substances are capable of assimilating foreign matters only by decomposing them, and reducing them to such a state, that their original nature is no longer recognisable. The facility with which this end may be accomplished, depends entirely on the degree in which the decomposition of these respective alimentary materials takes place. It may be asked here, what means does nature employ in order to facilitate this operation? To solve this question, our author enters somewhat into detail. Man, he says, the chief object of our inquiries, can maintain his own peculiar composition and vital activity immediately only by the higher and more perfectly elaborated products of the animal and vegetable kingdoms: even the animals, which serve for his nutrition, take from the external world for the support of their existence only organised and chiefly vegetable substances. As the immediate and mediate source of the support of man, we therefore consider the vegetable kingdom more appropriately than the mineral and animal kingdom. So soon as the first molecule of the first material germ of life is formed, the external world already begins to act on it, and it evinces its self-subsistence and its inner life by its capability of withstanding such aggressions. No doubt it gives off every moment a part of itself to this aggressor, but for this it is continually attracting other portions to itself; a continued reciprocal action, a never-ceasing

struggle, is accordingly established between this new creation and the external world; the latter wishes to rob it of its self-subsistence and of the materials appropriated to itself, whilst the former will appropriate to itself a constantly increasing quantum of material, it will increase, and go on to form itself according to its own fashion. The internal vital power of this new being struggles therefore with the external world about the appropriation of its material substratum. Should this internal vital power be sufficiently strong to overcome the opposition of those substances, which would thwart its progress onwards, it gains in matter, and to this matter it annexes a higher degree of vitality; if it be able only to paralyse the above-mentioned opposition, then the material loss becomes just equal to the cotemporaneous gain, and the degree of vitality continues in the same degree; but should the vital power succumb in the struggle, its material substratum vanishes every moment, and itself is constantly diminishing more and more, and approaches to that state, in which it originally presented the first molecule of its material germ to the external world for the object of the struggle. The quality of those substances, therefore, which more especially from the external world, exercises the most immediate influence on the bodies producing themselves in this way, must regulate the course of the entire process. The facility of their appropriation, the quantity of readily assimilable materials, and the predominance among them of those which are best suited to the nature of the forthcoming corpuscle, determine as it were its whole chance of success, which therefore, in other words, will depend on the degree of solution of these substances. He next proceeds to show that this solution or decomposition of these substances, so necessary for their assimilation, is regulated chiefly by water, oxygen, hydrogen, and what are usually called the imponderables. He then observes that water is the regulator of vegetation, and thence deduces the necessary dependence of the materials of the human organism on water, in as much as the vegetable substances employed for its support depend immediately on water. After proving the indispensable necessity of the presence of moisture to vegetation generally, and to individual species of vegetables in particular, he ends this, the first, chapter by concluding that "the development of all those substances which man derives from the external world, as well from the vegetable as from the animal kingdom, for the purpose of his nutrition, depends unconditionally on the aqueous vapour suspended in the air. The first assimilation of the food, that namely whereby it is converted into a fluid, which is then by the action of atmospheric air formed into a perfectly organic material, must consequently be regulated by the atmospheric water."

The SECOND CHAPTER treats of *the Influence of the Atmospheric Water on the Respiration.*

This chapter commences by pointing out how indispensable atmospheric air is for animals and vegetables, and also the necessity of a second great metamorphosis of the nutritious juices by the air. We have here a description of the respiratory organs of plants and animals; of the qualities of atmospheric air, and of the aqueous vapour suspended in it; of the circumstances also which modify this vapour with respect to quantity; of its influence on the inhalation of oxygen and the exhalation of carbonic acid, on the absorption of nitrogen, and on the pulmonary transpiration in the human subject; in all this we do not find any thing very different from what we meet in our ordinary works on chemistry and physiology. The winding up of this chapter is, that the whole process whereby the crude chyle is fitted by the addition of atmospheric air for the reparation of the organic material which has been consumed through the vital process, is wholly dependent on the watery vapour suspended in the atmosphere.

The *Fourth Chapter* describes the influence of the atmospheric water on animal heat. Here we have an account of the warmth brought to the earth by the sun's

rays. The author shows that the organic process going on within the body is the principal source of animal heat, and that the process of respiration by itself is but a modificator of it. The watery contents of the atmospheric air, and the evaporation going on from the animal body are the mediate regulators of animal heat. The aqueous vapour suspended in the atmosphere is proved to be a modifier of the animal heat from its influence in raising and depressing the temperature of the air, which variations of temperature in the atmosphere cannot but exercise considerable influence on the heat of the organism.

The conclusion which our author arrives at from the principles and reasonings contained in the first section of this work is, that the aqueous vapour suspended in the atmosphere is the regulator of all the functions, and of all the conditions of human life; the preparation of the crude nutritious fluid, its perfect organisation by respiration, the graduation of animal heat, the production of animal electricity, and the special influence of light, are unconditionally regulated by it The author has here shown how the action of atmospheric air on the five chief regulators of life are regulated by the quantity of water contained in it. He has not, however, at the same time analysed for us the modifications which that action undergoes by reason of the difference of quality produced on an atmosphere, in consequence of the combination which it enters into with the aqueous vapour given off from the surface of the earth under so many varying circumstances.

Though the mere consideration of the elements of water, their peculiar relation to the imponderables, that of the incalculable quantum of these bodies, as well as their extreme divisibility, place it beyond doubt, that from the connexion of the proper elements of the atmosphere with the aqueous vapour under the influence of the solar rays as many characteristically different combinations proceed, as there are circumstances modifying the peculiar manner in which the aqueous vapour is developed, though also every one of the above-mentioned modified constitutions of the atmosphere divide and metamorphose the sun's rays in a peculiar manner, and consequently must impart a peculiar direction to all organic bodies in general and to the human organism in particular, as well mediately as immediately, still in this first section of the work we have no analysis of the effect of either of these many atmospheric variations on the process of digestion, nor on that of the respiration, nor on any of the other three great regulators of life. The author however ingenuously acknowledges that, in the present state of science, such minute analysis is beyond our reach.

We here close our notice of this very profound work. From the great importance which the author seems to attach to the *watery* vapour of the atmosphere in modifying the several vital functions, we have no doubt but that our friends, the hydropathists, will hail the book as a regular God-send.

REASON AND INSTINCT COMPARED.

IN a very curious and amusing work, by Dr. J. C. Hall, entitled "Interesting Facts connected with the Animal Kingdom, &c.," there is a chapter on the above subject, which is the only one we can notice in this Journal, though we can most confidently recommend the whole volume to the attention of our readers. We shall much condense our author's ideas, though adhere very close to his own language.

The grand resemblance between man and brutes is, that they are both material. Both have living organised bodies, produced by generation and supported by food. Both have senses, sensations, imagination, and memory. They both enjoy pleasure and suffer pain. Both have a natural propensity to self-preservation—both are liable to diseases—and both inevitably die.

Brutes have many advantages over man. They require no clothes or implements of defence. They bring into the world with them all that they want, except food, which instinct teaches them unerringly how to procure. As soon as their appetites are satisfied they are perfectly happy, neither reflecting on the past, nor concerning themselves for the future.

Man, on the other hand, is obliged to learn, to meditate, to invent, to labour, and, after all, has often difficulty in procuring the necessaries of life. His passions more frequently lead him astray than guide him to happiness.

But REASON is thrown into the scale, and gives man prerogatives over instinct. By this he is enabled to procure not only the necessaries, but the luxuries of life, and to multiply all his pleasures. Such pleasures result from knowledge, wisdom, religion, order, and virtue, and "endure for ever," whilst sensual gratifications unfit him for every thing great and dignified. Man is the only animal that is always advancing progressively in discoveries, and enlarging the sphere of knowledge. Whereas brutes remain stationary, and are incapable of soaring over others of the same species.

But if we come to a closer analysis or comparison of Reason and Instinct, we find great difficulty in drawing a clear distinction between the two. It is only by their great distinctive *effects* that we can discriminate the one from the other. Thus the elephant, the ant, the beaver, the bee, &c, show combination, intellect, intelligence, communication, by some kind of language, and almost all the features of reason.

Still, however high the scale of intellect rises in the animals alluded to, they are bound down by Instinct to follow in the track of their progenitors, without any deviation, whereas Reason is eternally prompting *invention*, which never appears in the brute.

Dr. Hall descants learnedly and ingeniously on the divine origin of the human mind or soul, and considers that, next to Revelation, the universal concurrence of all nations in the belief of an immortal soul, affords the strongest proofs of its truth. We cannot see any thing like proof in this general (for it is not a universal) concurrence. The belief that the sun daily travelled round the earth, was, at one time, just as general as the belief now in the future existence of the soul. There is, in fact no proof, and scarcely a probability, of a future state of existence, except in Revelation—and with that we must be content.

We have thus given the substance of Dr. Hall's chapter; but we think he might have added several other distinctive characters between man and animals; or, in other words, between Reason and Instinct. One of the greatest distinctions, and which, as far as we know, has never been noticed, is the fact, that MAN is the only animal in existence who knows, or even thinks, that he must die. This piece of knowledge seems to be a necessary accompaniment of REASON, and no small drawback on the pleasures of that boasted gift! It is a prescience which embitters a great portion of the life of man!

Man, being a free agent, and not bound down, like brutes, by Instinct, the fear of death, and still more the fear of something after death, is one of the greatest checks on his evil propensities. He sees and knows that "the wages of sin are death," even in this world, and he is taught from infancy that, beyond the grave, there is another state of rewards and punishments. The wonder is, that, under this double system of fears and hopes, he should ever venture to commit a crime? Yet he does so every day and hour. This shews how strongly are the seeds of vice implanted in the human constitution! Yet these two checks, one obvious to our senses, the other perspective to our fears and hopes, are the only ones that hold society in any kind of order.

In respect to language, we have some doubts as to its being peculiar to man. Putting the peculiar cries of animals, by which they recognise their own species, out of the question, the division of labour among beavers, ants, bees, &c. can hardly be allotted without some communications very like language. But no animal, ex-

cept man, can commit language to brass, marble, or paper. The cooking, clothing, calculating, and other characteristics of man, need not detain us. Much has been said about the "os hominis sublime," but the kangaroo stands very nearly as upright as man—and a pine-tree stands more erect than either. His physical organization is not essentially different from that of the beasts of the field. It is by his mental powers alone that man can be distinguished from the animal kingdom around him.

One question remains. On which side does happiness predominate?—on that of man or that of beasts? Those who have lived longest in this world and seen most of human nature, will have little hesitation in casting the balance in favour of animals. The young and the sentimental will probably come to a different conclusion. As far as contentment and absence of misery are concerned, brutes have infinitely the advantage. Excepting those that have the misfortune to come under the yoke of bad and heartless wretches, brutes have little or no suffering, sorrow, or care. Food and shelter are all they want or wish, and there is every reason to believe that they enjoy both of these as much as their masters. They labour under neither gout nor dyspepsy—hypochondriasis, or monomania—chimerical hopes, or superstitious terrors! They have but one object to pursue—their daily subsistence—and that object obtained, their care about the present, their regrets about the past, and their apprehension for the future are null and void.

But then the pleasures of knowledge, of literature, arts and sciences! Are these unalloyed with misery? No, indeed. We have it, on the best authority, that KNOWLEDGE—

"Brought death into the world, and all our wo."

As far, then, as happiness is concerned, knowledge is rather a curse than a blessing. We have no reason to boast of that prerogative of man! But whether for good or for evil, the Almighty has thought fit to endow us with a power quite unknown to brutes, and therefore it is the duty of man to obey the will of Heaven.

PATHOLOGICAL SEMEIOLOGY OF INFANCY. By Dr. *Vanier.*

(From the *Clinique des Hôpitaux des Enfans.*)

IN some of the former Numbers of our Journal we gave several extracts from this periodical, which is exclusively devoted to the consideration of the diseases of children. We now propose to give a succinct analysis of some papers by Dr. Vanier, which he intends to form a *General Pathology of Infancy*, and to serve as preparatory to the clinical studies of the diseases of infants, and to point out the best method of interrogating patients of this tender age.

The practitioner should first endeavour to ascertain the general constitution of his little patient.

The rickety constitution is not devoid of influence on other affections which may attack children.

The characters by which this constitution may be recognized are as follows: Children in this state have, generally speaking, black eye-brows, eyes blue, hair black, sometimes red, skin brown. Children affected with thoracic rickets have a timbre of voice entirely different from that observed in other children. This modification, more or less marked, according as the rickety constitution itself is more or less advanced, is analogous, with respect to age, to that which distinguishes the organ of adults affected with considerable deformation of the thorax.

The scrophulous constitution again presents the following characters: children so predisposed have generally red hair; the colour of their skin is a dull white, or a bluish white, and the veins are well marked and easily traced beneath the

skin. They present an oily, œdematous aspect; one would almost say that they were affected with slight infiltration of the body. They are almost always ill-tempered; they cry for the slightest cause, or without any; they never smile, and they refuse all attempts at walking. They eat a great deal. They reject dainties of which other children are so fond, and greedily seize on a piece of plain bread. One character, which distinguishes scrophulous from rickety children is, that if you take them up into your arms, you feel, that when you hold them but feebly, notwithstanding the softness of their flesh, they sustain themselves of their own accord, and their muscles act; that if they catch you by the finger, you will feel that they grasp it with considerable force. Such are the children predisposed to scrophula: rickety children slip down between your hands for want of support on their legs; their arms, unable to sustain them, when they grasp your hands for support, are raised somewhat above their head on either side, whilst their body slips down to the ground. If you hold out your finger to them, they will not be able to grasp it. Such are the characters by which we shall be able to distinguish these two constitutions, in the first period of infancy, before they are as yet characterised by traits, which will soon impress them with so different a physiognomy.

These observations are of course applicable only to such children as are at least some months old.

In these remarks we shall always confine ourselves to cases of children at the breast; but among these we shall form a separate class of new-born children, that is, of children at least one month old, in whom the umbilical cicatrix is not complete, and who still present some of the appearances which attend or follow birth, such as jaundice, erythema, &c. We may now make a few observations on weakness as evinced at birth; this is manifested by an external state, which is always nearly the same with respect to its form, but of which there are different degrees: limbs slender, respiration difficult, painful cry, inability to retain drink, extreme debility, limbs emaciated, eyes hollow, and countenance cadaveric. The causes of this state of the system are very variable. It may be the effect of different organic lesions, or may exist without any species of lesion whatever. In order to treat this state of the system, we must appreciate its true cause, as the debility may be only apparent.

If there are certain functions in adults which must be interrogated, before medicinal treatment have as yet disturbed them, the same holds good still more in the case of children. Our method of proceeding in this particular consists in examining the infant, when it is quite tranquil (first examination,) and also whilst it is in a disturbed state, (second period of examination.) Certain functions must be examined during the calm state of the child, which, if examined during the disturbed state, would lead into error. The examination to be made whilst the child is asleep, regards the complexion, the expression and spontaneous movements of the face; the pulse, the pulsations of the heart and the number of inspirations. In the state of disturbance we shall ascertain such pain as may be occasioned by the various manipulations employed for forming a diagnosis, the state of the mouth, and of the chest, the quality of the cry occasioned by such measures.

Examination of the Child during the Calm. Colour.—Immediately after birth the child has a deep red colour, which diminishes from the third to the eighth day. This colour may be attributed to the influence of external agents on the tender integuments not yet habituated to their action; as the impression of the air, the friction by the hands of the accoucheur, and of others employed about the child. In fact the colour of new-born children recognises the same causes as those which occasion the first cries. If the deep red colour continues beyond eight or nine days, or if after the first two or three days it is replaced by a yellowish tint, we must make a minute examination. To this circumstance we shall recur presently.

Paleness being one of the most remarkable phenomena in other serious diseases besides œdema of the cellular tissue, we shall speak of it when we come to the diseases in which it occurs.

Expression of the Face.—The countenance of a new-born child, when it is not suffering, is devoid of expression. This, however, is true only of the new-born child, and is not applicable to a child at the breast. Even when a month old, the child, from being in good health and from its functions being duly performed, expresses by the very insensibility, if I may so say, of its features, this state of well-being, which disappears only to be replaced by an expression of suffering, when it feels a desire for the breast, or when any of its functions are not duly performed. This insensibility, or inappreciability alluded to, is the intermediate state between retraction of the features, which is an expression of pain, and their dilatation which constitutes smiling, and is an expression of pleasure. Immobility of the features constitutes an intermediate state between this inappreciability above alluded to and painful contraction. This has been found to be occasioned chiefly by milk of bad quality, or insufficient in quantity.

When the countenance of the new-born infant is immovable and without expression, the mouth is closed, and there is no wrinkle between the brows. But as soon as there is pain, changes supervene, which, by their continuity or intermission, indicate intermission or continuity of the pain itself. In acute affections there is contraction of the features, numerous wrinkles on the forehead; approximation of the brows, which are cut perpendicularly by numerous furrows, the commissures of the lips are drawn outwards; in a word, the face is now sharpened. At a more advanced period of disease, the contraction of the features becomes permanent, and gives the child the appearance of old age, owing to the form of the dental arches destitute of teeth at the two extremities of life. According to Billard, the *pain-expressing countenance* of the new-born infants, like that of adults a prey to violent pain, consists in the upper lip being wrinkled and half-raised; vertical and horizontal wrinkles are observable at the root of the nose, and extend to the forehead; the eye-lids approximate, and several wrinkles form at the external angle of the eye, or are marked circularly in the skin. We conclude our remarks on this sign by observing that every modification of the countenance which shall exhibit a trace of pain more or less marked will always be a sign of disease more or less advanced.

We shall continue this subject in our next.

ELEMENTS OF CHEMICAL ANALYSIS, INORGANIC AND ORGANIC. By *Edward Andrew Parnell*, Chemical Assistant in University College. London, Taylor and Walton, 1842.

THE rapid advances which the science of practical chemistry has made within the last few years are truly extraordinary. The untiring industry and indefatigable zeal of Liebig, Rose, Berzelius, Orfila, and others on the Continent, as also of Thomson, Turner, Graham and Kane in our own country, have given an entirely new aspect to this important and valuable branch of natural philosophy. The interesting discoveries of Liebig more especially in animal chemistry, of which we have given a resumé in the last number of our Journal, cannot fail to attract the attention of physiologists and pathologists. The work now before us, the object of which is to give rules and directions for conducting the manipulations of chemical analysis, coming from a gentleman, who enjoys such peculiar advantages for attaining a perfect knowledge of his subject, will be found a valuable contribution to chemical science. It consists of four Chapters. The

first contains plain instructions for performing the ordinary manipulations of analytical chemistry. with a description of the most important tests used in chemistry, and the means of detecting the impurities with which these tests are occasionally adulterated. The second chapter contains an account of the appearances produced by the principal re-agents, when applied to various chemical substances. In this chapter will be found the use of the mouth blow-pipe in the manipulation of chemical analysis. The third chapter contains some excellent directions for conducting the qualitative analysis of compound substances. In this chapter will be found some excellent directions on the use of the blow-pipe in qualitative analysis, on the analysis of gases, and on the detection of poisons in organic mixtures. A subject of serious importance to medical men, viz. the qualitative analysis of urine, and the discrimination of urinary calculi, is contained in this chapter. Quantitative analysis forms the subject of the fourth and last chapter. Organic analyses, and the determination of the nitrogen contained in organic bodies, will be found explained with great clearness. An Appendix has been subjoined containing the method of calculating the atomic constitution of a body from its per centage composition, as also the various methods of taking the specific gravity of bodies. We have perused this interesting volume with great satisfaction, and have no hesitation in recommending it strongly, as a safe and valuable guide in conducting the intricate and perplexing operations of analytical chemistry.

THESAURUS MEDICAMINUM: OR THE MEDICAL PRESCRIBER'S VADE MECUM: containing all the Medicinal Substances of the Pharmacopœia, arranged according to their Therapeutic Action; with the most elegant Method of Prescribing each; and a TABLE OF INCOMPATIBLES, and Directions for the Treatment of Poisoning. By *D. Spillan*, M.D. Baillière, Regent-street.

THE name given to this little book reminds us of a book of the same name, and of a similar description, written by Dr. R. Pearson many years ago. The object which the author had in view in compiling this little work was to enable the junior practitioner to obtain at a glance a knowledge of the therapeutical action of the various substances employed in medicine, of those preparations of them which are officinal in the British Pharmacopœias, and of the method of combining them in extemporaneous prescription. What strikes us as novel in this work is, that to almost every article, whether simple or compound, a formula is subjoined, illustrative of the most elegant method of ordering it in prescription. The prescriptions are decidedly excellent and effective, and contain all the newest remedies. The great advantage of a work, like the present, consists in this, that it presents to the medical practitioner a bird's eye view of all the implements of his art, whereby he is saved an immensity of trouble and of time. The Table of Incompatibles is drawn up in such a manner that it cannot fail to prove of considerable use in preventing those errors of chemical combination so often destructive of medicinal efficacy in the best articles of the materia medica. We have no doubt but that Dr. Spillan's little "Thesaurus" will prove extremely useful to the practitioner. We feel satisfied that to urge the book on the notice of the profession it requires only to be seen in order to be appreciated.

REPORT OF HER MAJESTY'S COMMISSIONER'S ON THE STATE OF THE BRITISH SETTLEMENTS ON THE WESTERN COAST OF AFRICA. By *R. R. Madden*, M.D.

CLIMATE AND ITS INFLUENCE ON HEALTH.

THE instructions given to Dr. Madden as Commissioner of Inquiry on the Western Coast of Africa, by the Secretary of State for the Colonies, Lord John Russell, required of him to investigate the climate, general capabilities, commercial resources, and military advantages of the different settlements, as also to report on the state of the slave trade—the prospects of emigration from Sierra Leone to the British West India Colonies—and generally an inquiry into the moral and physical condition of the native population.

How ably and usefully Dr. Madden has executed these orders, the pages of his excellent "Report" fully attest; and were it not that the subject of climate—the interesting and all-important subject of climate—is too intricate and delicate for the generality of our practical English readers, we should take pleasure in quoting largely from Dr. Madden. We hope to do so on a future occasion, meanwhile, we can assure our brethren that, the best practitioners anywhere to be found will be those who have studied climate and disease in all their varieties. In temperate climates, all other circumstances being equal, the best physicians we are acquainted with are those who have known the worst climates with the most fatal and concentrated forms of disease belonging to them. To these it seems easy to contemplate the lesser degrees of diseased action, and to treat them with effect. It is thus that an acquaintance with unhealthy regions, becomes of practical utility to the British physician. The subject of the external causes of disease forms a department of itself, second in importance to no other that we could name; and we refer with pride to the almost exclusive investigation and elucidation of these causes by the medical officers of our fleets and armies, many of whom have subsequently carried their knowledge and experience, greatly to the benefit of the community, into our cities and counties.

The report of Dr. Madden comprehends:—"The general Climatorial Character of our different settlements—Observations on Professor Daniell's Report on the Waters of the African Rivers—Climate of Sierra Leone, of Gambia, of the Gold Coast—Bilious, Remittent, or Seasoning Fever—the Question of Contagion—the Influence of Climate on the Manners, Laws, and Religious Observances of the Natives—Mortality from Fever at Sierra Leone, &c.—Mortality at Bulama—Maxims on the mode of Living in Tropical Climates—Rules for the Preservation of Health in Hot Climates—Meteorological Journal." On all these points the reader will find important and interesting information; but we regret we cannot now enter upon them. Dr. Madden confirms the accuracy of Major Tulloch's Statistical Reports, although, he says, "the facts therein stated are called in question in our African settlements;"—indeed, we find that here, as in others of our worst climates, the surviving Europeans are under a strange and gross delusion as to their influences—extenuating the disadvantages of their respective stations—so as to deceive others, "by dint of endeavouring to impose upon themselves, and to establish the opinion that, whenever a man dies, the climate is not in fault, but his own constitutional peculiarities, or imprudence of some kind." Whoever has sojourned in tropical climates will remember this continual self-delusion on the part of the white inhabitants.

Of eight witnesses to the best modes of treatment in the fevers of the West Coast of Africa, seven recommend the use of mercury to salivation, and the eighth uses it in a more restricted manner—"only as a purgative." Bloodletting is practised with caution, and only by a few of the practitioners even locally.

Five out of the eight do not even mention the abstraction of blood. Quinine is very generally administered during remissions.

"The most successful practice, however," says Dr. Madden, "that any where on the Coast of Africa came to my knowledge, was that I received an account of, from the Dutch authorities at Elmina, of the system of treatment pursued by the surgeon of that settlement, and here mercury in any shape was never had recourse to, nor the employment of the lancet, but leeches largely over the stomach, and to the temples, forty or fifty at a time, and repeated so long as there was pain or pressure over the epigastrium. Quinine subsequently on the disappearance of the fever is exhibited externally, strewed over the raw surface left after the application of a blister on the stomach."

Without statistical and detailed statement of comparative result, it were vain to offer any opinion on a practical question of this sort. We cannot, however, help observing, in reference to the claims here set forth, and to the careful exclusion of "the lancet," that a fever and a subject that could bear "40 or 50 leeches at a time, and repeated as long as there was pain or pressure over the epigastrium," must be, the one, anything but of a low type, and the other, anything but feeble; for, in the generality of the low congestive tropical fevers, the application of leeches in such large numbers, even without subsequent oozing, has often appeared to us to sink the patient more than a moderate and well-timed abstraction by the lancet.

But it is in the time of using it that great errors and mistakes have been committed in regard to blood-letting in tropical fevers, and that so much misapprehension has arisen as to its utility. It is a point, however, that requires the greatest power of observation, experience, tact, and judgment.

I. A SYSTEM OF PRACTICAL SURGERY. By *William Fergusson*, F.R.S.E. Professor of Surgery in King's College, London. Post 8vo. pp. 595, Churchill, London.

II. PRINCIPLES OF SURGERY. By *James Syme*, F.R.S.E. Professor of Clinical Surgery in the University of Edinburgh. Third Edition, enlarged, 8vo. pp. 508. H. Baillière, London.

ALTHOUGH surgery makes less rapid strides than many sister arts and sciences, so that we do not open a new work, as we might a treatise on chemistry or physiology, half prepared for a completely new series of facts and a revolution in theories, since the last publication on the same subject, yet its progress within the last twenty years has been sufficiently remarkable to be worthy of observation.

The Scottish School of Surgery and its leading characteristics, in contradistinction to those of the English and Continental Schools, may have glanced through our mind on reading the titles, and the names of the authors, both distinguished Professors of Edinburgh, and one of whom but lately carried away from English competitors the chair of Surgery at the King's College. But on closing the work of the latter we found we had wandered over the whole field of surgery—marking its progress, not in one School alone, but in Europe, during the last quarter of a century, and the gradual change of precept and practice among the practitioners of the day. If somewhat surprised that an elementary work, for the instruction of students chiefly, in practical surgery, should have led us so far, we also felt that Mr. Fergusson had obtained the best compliment we could pay to the merits of his book. Had he not treated of surgery as a science, and avoided the merely conventional doctrines of a particular school, we should scarcely have accompanied him through many pages.

He leaves no principle of practice of real interest untouched, but with an easy and perspicuous style brings before the reader all essential facts, and the doctrines founded upon them, and while stating his own opinion, never fails to weigh with fairness and impartiality the views which others, entitled to consideration, entertain on the same subject.

Such a work we conceive has long been a great desideratum, not only to the student, but to the practitioner. Mr. Cooper's Dictionary may give all that is required, but it gives so much more, that if it do not altogether repel the student, it leaves him bewildered and confused. The same gentleman's "Elements," however excellent, is wanting in much as a practical work. The same observation applies to Mr. Liston's "Elements," while his admirable work on "Operative Surgery" is dedicated exclusively to that division of the art. Burn's Elements, are elementary in the heaviest sense. Mr. Syme's Principles of Surgery, (the third edition of which is now before us) presents many advantages over these, and although enlarged, is still not too bulky—but it has the drawback of being a description of the practice of one surgeon, and the doctrines of one school, rather than a general review of the principles of surgery. It treats many of the most important points with a Spartan brevity. Lastly, we must not omit the very clever, but withal, vade-mecum style of work by Mr. Druitt, where too much and too little are alike attempted, for a really practical work on surgery. We do not consider Mr. Fergusson's book perfect, or without objections; we are inclined however to think that it goes far to supply the deficiency experienced by the student in following the lectures of his teacher in surgery, and will moreover form a very valuable little work to the practitioner for ready reference. The woodcuts are in Mr. Bagg's best style, a great acquisition, and worthy of all praise for their spirit, clearness, and accuracy.

Mr. Fergusson states his own design in the production of this volume to have been "to produce a manual of the details of practical surgery, which shall, in some degree, meet the wishes and wants of the student, as well as of the surgeon already engaged in practice, and it is hoped that the volume may prove of some value to both parties."

"The present work has not been produced to compete with any already before the profession,—the arrangement, the manner in which the subjects have been treated, and the illustrations, are all different from any of the kind in the English language."

The work is divided into five parts, and the first of these, consisting of some 120 closely printed pages, is devoted to the "Elements of Practical Surgery." To this section we would particularly direct attention, as full of sound principles, and excellent precepts for their practical application, with much that is either not stated so well, or altogether omitted, in other elementary and practical works.

Here is our author's definition of practical surgery:

"Under the term Practical Surgery, I shall include the symptoms of disease and injury, the principles and objects of treatment, and such medicinal means of cure as seem to me to belong to the province of surgery; and under what is commonly called Operative Surgery, I shall describe not only those operations which are performed with cutting instruments, but also the various duties required on the part of the surgeon, as in the setting of fractured bones, reduction of dislocations, application of bandages, and other manipulations of Practical Surgery."

There is much good sense in the following appreciation of ambi-dexterity.

"It will be of advantage to dissect occasionally with the left hand; but there are few who will attain the same command over it as over the opposite one. From infancy we apply each hand to special purposes; the left hand has its peculiar duties to perform whilst the other is engaged,—it may be said to be the servant of the right; and on the part of the surgeon this seems to me all that is necessary; for it appears as absurd to expect ambi-dexterity with him, as it

would be to expect, or recommend it, with the painter, sculptor, or common mechanic. I have never yet seen a surgeon who possessed equal power and grace in either hand, nor do I consider that the efficient practice of his art requires that kind of dexterity possessed by the juggler, who tosses his daggers, and catches them again as they twirl through the air, as freely with the one hand as with the other, and with whom the movements of each hand are, on such occasions, of necessity, nearly alike."

Students would do well to act upon the advice the author gives, and his estimate of the importance of the minor duties of a surgeon.

"There cannot be a greater mistake in a young surgeon's education, than to commence the performance of operations before he has acquired a thorough knowledge of anatomy. If he enters into practice without such knowledge, he can neither operate with safety to his patient nor satisfaction to himself; all must be hap-hazard; whilst on the other hand, in prosecuting his dissections, he takes the surest way of acquiring that dexterity in the use of his hands and instruments, which will be of infinite service to him afterwards in the ordinary performance of his professional avocations; and here I do not so much allude to the performance of capital operations, as to the more common manipulations required in bloodletting, bandaging, dressing sores, opening abscesses, and the numerous little manual proceedings which constitute the routine of surgical practice, and which, though seldom named as 'operations,' should be deemed as characteristic of good practical surgery, as the dexterous removal of a limb, or the rapid and successful extraction of a stone from the bladder."

Passing in review the different instruments in use, our attention is called to changes which have taken place as to their selection and uses:—to some, which although among the oldest known, are new in the general, frequent, and beneficial application made of them in late years. As often may be observed, the most valuable are not those where the ingenuity has been put upon the rack to combine in one instrument all the mechanical powers, but some of the simplest form and character.

"The cutting forceps may be used for the removal of portions of bones, when the saw cannot be readily applied; and in some instances, as in excision of portions of the jaws, this instrument may be substituted with great advantage; there is but little skill required in using it, strength of hand being the chief requisite."

"For the removal of diseased or dead portions of bone, when the neighbouring healthy bone requires to be cut, it may entirely supersede the common saw, or the more complicated one, termed the chain-saw. Indeed, though this is a somewhat ancient surgical instrument (for it was figured by Scultetus nearly two hundred years ago), and though it had become in a manner obsolete till within these thirty years, I know of no single instrument whose re-introduction to practice in modern times has conferred a greater boon on the operating surgeon; and for this I believe we are solely indebted to Mr. Liston, whose example in using it has been most extensively followed by a large portion of the present race of operating surgeons."

Mr. Fergusson gives much praise also to the gouge, which he observes has been in a great measure overlooked by the modern surgeon. In operations for necrosis and caries he deems it quite indispensable. In such cases (rare we must believe them to be) where it may be expedient entirely to remove diseased surfaces of bone by violence, we are not inclined to quarrel with the gouge as a simple and efficient instrument for the purpose.

The author's directions as to the preparatory arrangements for operations are excellent, and his recommendation, that the operator should examine, and assure himself that every thing he may require is at hand, and in a good state, is well worthy of attention, if surgeons would avoid the dilemma of an operator

referred to by Sir Anthony Carlisle, who, after dividing the soft parts of a limb, had to send for a saw many miles off!

A little attention to these details, too often considered beneath the notice of our hospital surgeons—and to the preliminary arrangements among the assistants of the specific duty each should undertake, would not only tend much to the decency and celerity of operations and the welfare of the patients, but above all, would prevent scenes of noise and confusion, with their attendant loss of time, but too frequently seen. The London hospitals in these matters reflect but little credit in general upon English surgeons, and are far behind either the Edinburgh or Continental hospitals, and although Roux could not now with equal readiness find an hospital surgeon consuming twenty minutes in removing a limb—yet similar instances of tedious and bungling operations may too frequently be seen in more than one of our Metropolitan hospitals.

Under the head of "Counter-irritants," there are some very good observations, written in a fair and candid spirit; he thus sums up.

"Of these three modes of counter-irritation, I give a decided preference to the last. The caustic potash (the potential cautery, as it is usually termed) produces its effects far more slowly, and with less certainty than either of the other two, being in some instances apt to go deeper than might be wished, or to spread too extensively over the surface; and it is chiefly on the latter account that the plaster with the hole in it is recommended as a preventive. The moxa is troublesome to apply effectively; and often, after the patient has been put to a deal of pain, its results on the surface are so limited that the counter-irritation is slight indeed. My old colleague, Mr. Lizars, used the potash most extensively, and the groans and stifled screams of agony heard in his wards a few hours after his visit, bore ample testimony to the pain which it produced: I have myself used it frequently, and, of course, must plead guilty of the same kind of cruelty. The moxa, I believe, produces much more acute pain than the caustic, and possesses no advantage over it that I am aware of. At one time I used this remedy pretty often, but for the reasons above stated I have latterly almost entirely given it up; and now, when I have the power of selection, I almost invariably resort to the heated iron."

"Though there are still many prejudices against it, and certainly many just objections to its indiscriminate use, it seems to be more in vogue among modern surgeons than it once was; and, under judicious guidance, it appears to me a more manageable, equally efficient, and less painful counter-irritant than either of those last mentioned. It is, besides, highly serviceable in arresting hemorrhage, when no other means will answer, and is altogether of much use in surgery, as will be explained more particularly afterwards. It must be confessed, however, that there is an appearance of rudeness and cruelty in its application, which must always render its frequent use objectionable in modern practice."

The application of the cautery over a large surface with intervals, so as to avoid a slough—and the beneficial action of this method upon chronic cases of diseased bone or periosteum, are at once judicious and practical.

"Instead of applying a ball or single mass of iron, so as to cause a slough on the surface, an inch or more in length, and perhaps half the breadth, I generally bring a larger extent of surface under its influence, by scoring the skin much in the same way as the operation of firing is done in the horse. The process is slower, and therefore more painful than a single touch of the instrument, but in some cases it presents such advantages, in my opinion, that, when the cautery is actually appealed to, the difference may be overlooked. I was first led to apply it in this way, from drawing some analogy between certain nodes on the tibia and splints on the young horse. In such instances it is well known that, when the animal continues lame for a length of time, and when stimulating ointments and blisters have seemingly had no effect, the application of the cautery effects a cure, more particularly if due rest is given afterwards. Although in most

instances a painful node requires constitutional treatment as well as local, and differs in almost all respects from what is termed a splint in the lower animal, yet occasionally painful chronic swellings are met with on the surface of the tibia, which have resisted all the ordinary modes of treatment, internal as well as external. Many years ago a case of this kind occurred in my practice. A young man, aged twenty-three, had two years before contracted syphilis, and after the primary symptoms were cured, a node formed on the tibia, which occasioned him much pain:—from being a person of stout appearance, he now seemed like one exhausted by a painful and malignant disease. Before I saw him he had undergone various courses of mercury and other medicines, and had the part repeatedly leeched and blistered. I again subjected him to similar practice, and also tried iodine freely, both internally and externally, but with no mitigation of his sufferings. Rest seemed to produce as little benefit, and his disease was worse at night. For six months I watched the progress of the case, and then I applied the cautery in the mode referred to. During the evening he slept better than he had done for three months before, and from that time his disease was cured. I saw him occasionally for years after, and he had never subsequently experienced another twinge of pain in the swelling. I have had similar success in other examples; and though I would not wish any one to imagine, that I predict or would anticipate invariable success from the measure, I cannot but strongly recommend it, in such-like instances, especially where the affection seems to be, and perhaps is, entirely local."

"The chief advantage which I fancy the plan above described to possess is, that sudden excitement is produced over a large surface, whilst at the same time the skin is not destroyed and converted into a slough, as with the caustic or moxa, so as to leave a large open surface, which will heal but slowly, and will always leave a considerable scar. If, on the other hand, a round or flat piece of iron is applied even once to the surface, a slough must be produced, which separates more slowly, and leaves a more troublesome sore than the small lines of sloughs, and the consecutive sores, resulting from the practice above recommended."

Among the modern improvements of surgery, apparently trifling, but in reality important, we believe cold and warm water dressing may deservedly be placed very high in the list—were it merely for the exile of poultices, or "cover sluts," as they have been not inaptly termed, which it is their tendency to effect, the practical benefit would be great.

We cordially concur in the praise given by our author to this means of reducing inflammation.

"If I deemed warmth required, instead of using a poultice, I would wrap the part up in wet lint, and cover it with oiled silk. Moisture and heat are thus more effectually secured than by a poultice, which will soon get cold on the surface, and in a few hours become almost quite dry. On other parts of the body this plan, modified by circumstances, may be resorted to with every advantage, and I cannot speak in terms too laudatory of the 'warm-water dressing,' as this method is now usually called, which, under the influence of many practical surgeons of the day, has in a great measure superseded the more troublesome, and more cumbersome poultice."

In treating of the consequences of inflammation and the appropriate treatment, we find much to recommend, although little that is absolutely new. The observations on shivering as a diagnostic sign of suppuration—pointing out its uncertainty, are good, as also on the proper period for giving exit to matter.

Seeing the judgment and impartiality with which Mr. Fergusson handles all the leading questions in surgery, we have been induced to give more attention to these subjects than a work of this kind usually demands or repays—we will endeavour very cursorily to present our readers with the result.

QUESTION OF AMPUTATION IN GANGRENE AND MORTIFICATION.

We must confess our own experience of the propriety of amputating before an obvious and vigorous effort at separation has completely isolated, to some depth, the dead portion, although it furnishes several successful cases, is, upon the whole, unfavourable to early amputation and its risks—our author takes a similar view. He says,

"In the instance of spreading gangrene, as has already been stated, it is difficult, if not impossible, to say where the disease is to end,—where there is to be a separation between the dead and living parts,—and hence it has been the prevalent custom to wait until a line of demarcation has formed, though, from the examples of Larry, Lawrence, and some other modern surgeons, the practice of operating at an early period has been strongly advocated. Although educated in these latter doctrines, and strongly prepossessed in their favour, I feel bound to say, that after having acted upon them repeatedly, and seen others do the same, the success has been very different from what I anticipated. I have in my recollection six cases in which I amputated during spreading gangrene, four times in the thigh, (one of them being for a simple fracture of the leg, another for compound; both close upon the ankle; the third following spontaneous obstruction of a popliteal aneurism, and the fourth after ligature of the femoral artery for a similar disease); one in the leg for severe lacerated wound of the foot, and the sixth at the shoulder-joint for extensive injury of the arm. None of these succeeded; and though I might possibly in future resort to similar practice, I must say that I should feel greatly inclined to wait for a line of demarcation; and that even here, I should not be very sanguine as to the result. Numerous cases might be brought forward, however, to prove the success of such practice, yet I believe, that, in many instances, the surgeon will best show his judgment, by amputating, in severe injuries, before sufficient time has elapsed for gangrene to come on, or by waiting, in the event of such an occurrence, until it is seen how far, and to what degree, the affection is likely to proceed, and in addition, to what extent the constitution sympathises with the local disease. The latter circumstance is, indeed, often remarkable; but whether it is from the wound or the gangrene, it is difficult to say. I once saw an amputation in the leg performed by a surgeon of great experience, for a severe compound fracture: the calf of the leg, when the incisions were made, was in a slightly suspicious condition, but not sufficient to deter from selecting this part for the operation: unequivocal gangrene, however, attacked the stump, and within eight and forty hours amputation was performed in the thigh: again the disease appeared in the stump, and at the same time in the skin over one of the scapulæ, where there was no suspicion even that the slightest injury had been inflicted."

ERYSIPELAS.

The author, while very justly, in our opinion, reprobating the abuse of incisions—extending, as we have too often seen them, in one continuous line, from the trochanter major to the malleolus—so that on raising the limb, the whole external covering of skin and cellular tissue hung pendent like a wrapper of chamois leather—we think he underrates their free use within more judicious limits. In many cases, we are satisfied the worst results have been averted by three or four incisions down to the seat of the sloughing and suppurative action, of from three to six inches in length, if the whole lower extremity be involved.

FALSE JOINTS.

Mr. Fergusson is less adventurous—and we may add more judicious, than our brethren across the Atlantic in reference to the operative means for remedying this mischievous consequence of fracture. There is fortunately no great

ıce of opinion among our most distinguished surgeons upon this class of
-He says,
opinion regarding false joints, whether resulting from fractures or dislo-
will be found at greater length in future pages, where I shall speak of
ır cases; meantime, I may here state, that in the treatment of non-union,
resort to almost any reasonable measure before I would cut down to the
was done by White."
ıuld only cut down to the fragments as a last resource, and, on doing so,
ated by circumstances, whether I should merely scrape the exposed sur-
actually cut portions of them away with the saw. In the leg or fore-arm,
resort to the latter plan with great reluctance, more especially if only one
s at fault."
ıw, not very long ago, a case of failure in one of the London hospitals—
ıe humerus was cut down upon, and after a most trying and tedious dis-
o detach the slightly oblique edges of the fracture, extensively united by
ous and cartilaginous structure, from each other—with some violence, one
ne was brought out and removed by the saw.
but a robust man would have been likely to have borne this operation
imminent danger from its constitutional effects—and the result satisfied
an infinitely nicer adaptation of means, and more assiduous care and
ss to secure coaptation and immobility would be in all cases required, to
easonable chance of success in a public hospital.
ordially agree with Mr. F. that "any reasonable measure"—were better.
s an instructive example of the benefits of full doses of whiskey, in a habit
ly debilitated, where it had formed the customary stimulus, and the in-
he treatment exercised on the process of union.

EXCISION OF JOINTS.

subject Mr. Syme has made his own nearly, and we observe with plea-
truly rational and judicious view he takes of the applicability of this
ı.
ıutation has until lately been regarded as almost the only means of
m carious joints. But it is now ascertained by experience, that, on some
s, the limb may be saved by cutting out the articulation. The softened,
ed, and ulcerated integuments, the thickened and indurated cellular
e, and the gelatinous synovial membrane, are found to afford no serious
to recovery, provided the whole of the bone, so far as it is actually
be taken away. The operation requisite for this purpose, though severe,
ıore dangerous than amputation, because the joint, previous to its per-
, has been opened by the disease; the whole of the articulating tissues
re apt to suffer violent inflammation when irritated are either previously
l or removed; the great blood-vessels and nerves are not interfered
ıd the patient is not subjected to the shock which is caused by taking
imb.
o the joints which may be subjected to this operation, it is evident that
nt to which the acetabulum is almost always affected in the hip-disease
ny attempt at excision. Though experience has not yet fully decided
the limbs that might be preserved by cutting out the knee and ankle-
ould be preferable to the artificial substitutes which may be worn in
ad, it seems pretty well ascertained that they would not. The wrist,
n the number of bones and complexity of articulations entering into its
n, together with the numerous tendons, arteries, and nerves passing
does not seem to be within reach of the operation. But the elbow and
-joints, while their structure and situation are most favourable for ex-
ıold out the greatest inducements to effect their removal without per-
amputation. In all ranks and circumstances of life, the use of the hand

is of great consequence, and though the elbow or shoulder were to remain perfectly stiff and motionless, yet, if the hand could be preserved entire and serviceable, by excision of these joints, it would be infinitely preferable to do so, instead of taking away the limb. But it has been proved by numerous facts, that while the joints beyond the disease remain as useful as ever, the one which has undergone the operation regains such a degree of mobility and subjection to the action of its muscles as sometimes to render it hardly distinguishable from a sound one. and in general prevents it from at all impeding the use of the arm by its stiffness, There is no new joint, strictly speaking, formed, but a strong fibrous substance unites the extremities of the bones, and by its flexibility allows them to move within proper bounds; while the muscles cut across in the operation obtain new attachments, so as to perform their usual office."

As Mr. Syme's experience in this operation is probably greater than that of any other surgeon of the present day, his opinion is nearly decisive.

AMPUTATIONS.

Primary or secondary—flap or circular—short cut ligatures or long—torsion or ligature—immediate or deferred dressing—these are all questions of interest and importance, which (with the exception of the first) had been little discussed until the last few years. On some of these points, surgeons are nearly unanimous, while, on others, considerable difference still exists.

Primary or Secondary?—"In all instances," says Mr. Fergusson, "when a limb is injured beyond the hope of recovery, there seems little doubt among the present race of surgeons, that immediate or primary amputation should be performed; the statistics collected by Mr. Guthrie, and still more recently by Mr. Rutherford Alcock, give decided proof in favour of this practice."

This does not altogether coincide with the impression Mr. Alcock's publications and lectures on this subject have given us, and on referring to the concluding lecture of the series which appeared in the Lancet, giving a summary of his views, we find that he makes a distinction, founded upon statistical results, between the injuries of civil and military life—and by no means regards primary amputations in civil hospitals as the most advantageous. We find it stated on the contrary that—

"The results of military and civil hospitals combined stand in the following order:—

"First. Amputations for chronic local disease.

"Second. Primary amputations for injuries of military life.

"Third. Secondary amputations for injuries of civil life.

"Fourth. Primary amputations for injuries of civil life.

"Fifth. Secondary amputations for injuries of military life.

"The question of primary and secondary amputation is here reversed in military and civil life. The main doctrine on which the army surgeons explained and upheld the superior excellence of primary amputation and its universal application (viz the rude health of the patient,) is shaken to the centre by the most successful of all the series of cases proving to be those performed where long pre-existing disease, and often confinement, has removed the patient far from a state of robust and plethoric health, to one of debility and emaciation.

"Is it not strange that the medical practitioners of civil life, of large cities, whose talents are employed in large institutions, where hundreds of cases of amputation for injury and disease, in a few years must pass under their observation, should for so long a period have accepted doctrines and results, the first fallacious, and the latter inapplicable, and to which the facts and experience of their own practice are totally opposed?"

As the latest writer, who with much experience, has devoted great attention to

this subject, his conclusions demand consideration—if found correct, they would inevitably lead to a great change in the opinions more generally held on the subject of primary and secondary amputation.

Mode of Operation.—Nothing can be more impartial than the estimate we find in Mr. Fergusson's work of the relative value—the advantages and disadvantages of the flap and circular operations. We recommend it to all practitioners who may not have the means of forming their opinions from extensive opportunities of watching the performance and results of the two plans.

Mr. Fergusson's opinion is, that in skilful hands there is no very great or preponderating advantage on either side, and this, from one brought up in the school of flap operations, is strong evidence. We regret we have not left ourselves space for any extracts to do more justice to the able manner in which the author has handled this part of his subject.

Of torsion of arteries as a substitute for ligatures, it is truly observed, that it never established itself among surgeons generally, and with only a very doubtful advantage at best, it presents many very serious drawbacks.

In reference to deferred dressing of the stump, we are glad to find that Mr. Fergusson does not "hesitate to recommend that, as a common rule, the wound of an amputation should be dressed while the patient is on the operating table." Indeed the deferred mode of dressing, like the torsion of arteries, has never been established among English surgeons, and they may be classed together among the modern attempts at improvement that have been finally condemned. We must not however go farther into this subject—and can indeed only glance at the remaining parts of these works.

In the sections devoted in both to the injuries of the head we cannot avoid feeling that this subject has been but superficially handled, and that they imperfectly represent the present state of surgery and opinion, in reference to these most interesting and important injuries. The same observation applies in a lesser degree to the injuries, wounds, and operations of the chest and abdomen.

A large portion of Mr. Fergusson's work is devoted to a consideration of the operations required by injuries and disease—on which little need be said. The instructions given are clear, precise, and well adapted to attain the object of the author, while nothing can be more perfect than the plates in illustration, which are sketched with a masterly hand, and cannot fail to be of great assistance in rendering the description more vivid and easy of comprehension.

We had intended giving to that section of Mr. Fergusson's work, devoted to the subject of lithotrity and the relative merits of lithotomy, more space than we have left ourselves. The following extracts we may safely recommend to the consideration of our readers, as a resumé of the whole.

"Like many other novelties, lithotrity has undoubtedly been too much vaunted by its professed advocates and performers; but it is equally clear that in many instances it forms an admirable substitute for lithotomy. Notwithstanding the reputed success of Civiale, it seems to me that, in the present stage of its history, we have not sufficiently authentic data by which to determine the comparative safety of lithotrity to that of lithotomy; but regarding the applicability of the former, and even its superiority in many instances, there need be no doubt. Years must yet elapse, and the operation must be tested in our public hospitals by the same class of surgeons as those on whose proceedings the statistics of lithotomy have been founded, before an unbiassed professional judgment can be given on the subject."

"But from my own experience I should say, that the most formidable objection to lithotrity is the apparent irritability of the urinary organs: if the patient does more than wince while being sounded; if the application of the steel to the urethra seems to occasion pain—I mean more than that sensation which patients usually have on such occasions—if the mucous surface of the bladder is so tender as to

cause the contact of the instrument to be borne with difficulty; and if the muscular fibres are excited to such violent contraction as to occasion the evacuation of the fluid contents along the side of the instrument, or to excite an irresistible desire to micturate, then assuredly the circumstances are peculiarly unfavourable to the proceeding."

"Although lithotrity may be performed on children, it may well be doubted if such a proceeding should ever be attempted upon them; for it would be difficult to name any single operation of magnitude which has been more successful on young subjects than that of lithotomy. Out of one hundred and five cases operated on by the latter method in the Norwich Hospital—the patients being under ten years of of age—only three died, thus giving an average of one in thirty-five; and although other tables do not show altogether such favourable results, there are good reasons for supposing that the average deaths in young persons who are subjected to lithotomy is little more than one in twenty-eight or thirty. Until it can be shown, then, that lithotrity surpasses this success, and is in almost every other respect to be preferred, it is only a fair conclusion to draw at the present time, that lithotomy is decidedly preferable in such subjects; and when, moreover, the comparative frequency of the disease in children is taken into account, it will at once appear that a large proportion of all cases of stone must yet be set aside for the lithotomist. Above the age of puberty, however, the average alters very materially, and, as already stated, the propriety of resorting to lithotrity ought to have due consideration."

In reference to this last observation we had forcible proof of the danger of exciting any great irritation by the passage of instruments in a little boy who came under our observation a short time back. He had a small stone in the bladder, detected once by the surgeon in attendance, but not subsequently, and two surgeons of eminence sounded in vain upon two or three occasions. In the course of three weeks all doubt was solved by the death of the little sufferer from the irritative fever induced. It ought to be received as an axiom in surgery—*Below the age of puberty lithotrity is not applicable.* In maturer age the question is yet to be decided, and not by every clumsy bungler who can push an instrument into the bladder; but by those whose skill, tact, and delicacy of touch will leave no doubt as to the fairness of any results following their operations.

The new edition of Mr. Syme's work, is not only enlarged but improved; and, in reference to Mr. Fergusson's book, we sincerely congratulate the students in the possession of so able a guide to the study of surgery, and feel assured it will speedily recommend itself very generally, not only to students but to practitioners, for whose use it appears not less specially designed.

REPORT ON THE CHIEF RESULTS OBTAINED BY THE USE OF THE MICROSCOPE, IN THE STUDY OF HUMAN ANATOMY AND PHYSIOLOGY. By *James Paget*, Demonstrator of Morbid Anatomy at St. Bartholomew's Hospital, &c. London, Churchill, 1842.

IT does not consist with the spirit or the habit of this Journal to go deeply into researches that are obviously barren of practical application. Microscopic inquiries have hitherto fallen within this category, and we fear they are still likely to be retained in it. We cannot therefore examine at any length the Report before us, nor present our readers with any thing like an elaborate account of it. But it would be the height of injustice to pass it over in silence, or to neglect the opportunity of awarding to its author, Mr. Paget, the praise which richly merits, of research, accuracy, and ability. It is a very admirable sum

ıry of the present state of our knowlege of the miscroscopic structure of the ly.

The ground-work of all—the *Nature and Development of Cells* may be laid be- e our readers. We are sure they will read with interest, if not with actual fit, Mr. Paget's epitome of Schwann's views. Condensed, itself, to the utmost, ther condensation is next to impossible.

To Schleiden and Schwann is due the discovery of the laws of development of l through cells. These laws are invalidated somewhat in their details by late estigations, but confirmed apparently in their general bearing. We shall, with- ; further preface, state them.

1. *The Cells.*—"A Primary Cell, or as it is sometimes called, a nucleated or mentary cell, is a minute vesicle, usually of a spheroidal or oval form, com- ed of a fine transparent membrane, containing an albuminous, gelatinous, r, granular, or other fluid, and having on its walls, or in its interior, a small ly called the nucleus or cytoblast, which, again, commonly contains one or re dark round spots, nucleoli, or corpuscles. Such cells are found either sistently or temporarily, as one of the forms passed through in their develop- nt, in all, or nearly all, organized tissues, whether animal or vegetable, normal morbid. Whatever be the tissue to be developed, the first periods of its velopment seem to be similar. There is not first developed for each structure peculiar form; nor is each produced first on a small scale and then enlarged; t in all, the molecules are first arranged according to similar laws; and the leated cell is the form up to which in every tissue the principle of development ms to tend, and from which it proceeds in a different direction for the further velopment of each."

2. *The Cytoblastema.*—"The material in which the cells are formed, and from ich they derive their means of increase, is a structureless fluid or soft sub- ce, and is named cytoblastema. In the embryo it is that which has been d the formative, or primary, or indifferent substance; in the perfect animal the nutritive material effused from the blood-vessels into the interstices of dy-existing tissues. When cells are formed and fixed in it, it is usually d intercellular substance, and may undergo changes which contribute much to character of the fully-developed tissue."

3. *Development of the Cell.*—"The development of the cells is attained in rent methods, but the chief of them may be reduced to two schemes. The is that which is general in plants, and which Schwann believed to be as mon in the animal tissues. In it there are first produced in the cytoblastema te granules, perhaps simple cells. Around each one or more of these, an rfect layer of substance gradually collects by a sort of coagulation of part e cytoblastema, and this becomes gradually more dense till it forms a fine brane around the primary granule. The membrane continues to grow, and eases more in superficial extent than in thickness; so that, after a time, a e is left between its inner surface and the granule. The space is usually d with fluid, and the granule remains attached to some part of the membrane. he next place, a second membrane forms upon the first, and, enlarging at a h greater rate than the first does, separates from it, appearing at first 'like a ch-glass upon a watch,' and then gradually rising and leaving a cavity which ives a fluid within it. Thus there is produced a membranous cell, inclosing earing on its wall a second much smaller cell, which again incloses, or bears s wall, one or more granules or cells. The largest and last-formed is the mary cell: the next the *nucleus*: the third and smallest the *nucleolus*.

"The other scheme of development, which is probably the most frequent in the mal tissues, differs chiefly in the mode of formation of the nucleus. This is

not developed as a cell upon a granule, but, of the granules which are first formed in the cytoblastema, a few (rarely more than three) collect, adhere together, and compose a nucleus, in which one granule larger than the rest seems sometimes to compose a nucleolus. On a nucleus thus formed, the cell develops itself in the manner already described; and, as the cell is developed, the granular character of the nucleus diminishes. The granules, which at first adhered very loosely, become inseparably united; and then, as if by the collection of all their solid material to the common circumference, they are gradually changed to a minute smoothly-walled vesicle filled with fluid.

"A scheme nearly analogous to this is observed in the globules of the first milk, and in some globules of pus and of inflammatory exudations, and several morbid products; in which a great number of granules collect together, and tend, or attain to the formation of a cell without any distinct nucleus. As in the preceding, the nucleus was formed without a distinct or previous nucleolus, so here, the development proceeds immediately by the aggregation of many similar granules to the formation of the cell.

"In whichever of these methods they be produced, the primary cells seem to possess the power of working upon their contents, upon each other, and upon the intercellular substance, and of effecting those diverse chemical and structural changes by which the infinite variety of organized tissues is produced. According to these changes Schwann divides all the elementary forms of animal structures into five chief divisions, as follows:

"In the first, the form of the primary cells is nearly retained, and they either float separately in a fluid, or are moveable on each other. Of this division are the blood-, lymph-, mucous-, and pus-corpuscles, and the endogenous cells of certain glands, which, in their completest state, are primary cells floating in a fluid, and in which the changes after the formation of the cell are limited to those of their size and form, and those of their contents, in which, colouring and other matters, or new cells, are generated.

"In the second division, the primary cells are distinct, but they cohere by their walls, and sometimes firmly enough to form a connected tissue, as in the several varieties of cuticle, in pigment-membranes, and in fat. The changes of form which some of the cells in this class of tissues undergo, though greater than those of the preceding class, are simple. They assume a flattened, or an elongated, pyramidal, or conical form; they throw out processes which become ciliæ, or which, in some cases perhaps, as in certain pigment-cells, form canals of communication between the adjacent cells; or they are merely changed in form by their mutual pressure, which makes them angular, as in the epidermis-cells. Their contents also may be changed—becoming transparent, or having granules formed in them, or disappearing and permitting the cell to dry.

"In the first class, the fluid in which the cells float may be regarded as a permanent cytoblastema: in the second, the cytoblastema seems to be entirely or nearly consumed in the formation of cells; in some only of the tissues, a small quantity of it remains as a structureless intercellular substance, holding the cells together. In the third class, it becomes an important constituent of the tissue. The cells are nearly persistent in their primary form, but are separated from each other by the cytoblastema, which constitutes the chief mass of the tissue, and with which the walls of the cells are ultimately fused. Of this class are the bones and cartilages, of which the peculiar corpuscles are the primary cells, and the basis or intercellular substance in which they lie is the former cytoblastema. The chief differences in the cartilages depend on the relative quantity of the intercellular substance, and on its acquiring in its later development a finely fibrous structure. The canals of the bone-corpuscles either grow out from the sides of the cells, or are produced by spaces (intercellular passages) being left in the material deposited within the cells in the later period of their development.

"The fourth class is composed of tissues which in their adult state consist of

fibres; the cells in which they originated having undergone an entire change in their appearance. In these, among which the chief examples are the varieties of fibro-cellular tissue, each primary cell becomes elongated and spindle-shaped, and its extremities are drawn out into fibres. These fibres sometimes branch, and, at the last, they break up by splitting from the end towards the centre where the several fissures meet, and form a bundle of fine filaments or tubules. In this way it is believed that from each primary cella fasciculus of the filaments of fibro-cellular tissue is produced.

"The fifth and last class in Schwann's arrangement comprises the tissues which are formed from cells whose cavities, as well as their walls, have become connected together. In some of these the cells arrange themselves in rows, each being fixed to the ends of the two next to it; and the partitions which are at first formed by their apposed extremities being absorbed, the cavities of all the cells gradually merge into one. Thus, in the place of a row of primary cells, there is formed a single long cell, a secondary cell, whose wall is composed of the side walls of a series of primary cells. Such are the nerve-fibre, the muscular fibre, and the tubules of glands which have simple membraneous walls. The secondary cell may grow like a primary cell, and may form various substances in its interior; the peculiar nerve substance, and the muscular fibrils, are supposed by Schwann to be deposited within the cavities of such secondary cells; and the seminal corpuscles, and the corpuscles of several other glands, may be placed in the same list of secondary intra-cellular formations.

"In another case belonging to this division, the cells, instead of arranging themselves in rows and coalescing end to end, lie scattered at some distance from each other, and, sending out processes from their sides into the surrounding cytoblastema, assume the shape of radiating cavities. Their processes coalescing, they become a network of canals, in which the differences of caliber, which at first existed, are gradually annulled. In this way, it is believed, the capillary blood-vessels are formed."

Such was Schwann's system. For the exceptions taken to it, as they do not materially affect it, we must refer to the Report itself. The views comprised in it touch very seriously our notions of the nutrition of the tissues. That would not seem to consist in the *action* of the blood-vessels. As Mr. Paget observes:—

"Tissues are not laid down as such, but each forms itself out of a similar structureless material, and none attains its perfect form without passing through several of the stages of developement just described, over which blood-vessels seem to have no other influence than that of being, in certain cases, the conveyers of material. In the embryo, before blood exists or has been sent to any part, each part receives or consists of a similar material, which, by a power implanted in it according to a plan specially ordained for each creature, works itself into the peculiar form of each part. And when once a tissue is fully developed, the act of its nutrition is still the same. Each tissue abstracts from the blood, or otherwise receives, a similar material in the quantity necessary for its repair or growth, and this material, as in the embryonic state, develops itself. Only now its tendency to assume this or that form is influenced by the tissue adjacent to it; for, with its perfect development, each tissue seems to acquire a peculiar power of assimilation, that is, of determining another adjacent substance capable of development to assume the same form and composition which itself has.

"In the degeneration of tissues also, or in that which may be called their involution, as the contrary of their evolution or developement, and which is preparatory to their removal from the body, they cannot be considered as *taken* up or absorbed, without change, by absorbent or other vessels. They probably retrograde through part of the stages through which they passed in their development, return to their former structureless or fluid state, and then mix

with the fluid which is passing into the circulation for excretion; or for the nutriment of other parts."

RECENT PLATES OF ANATOMY.

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ON more than one occasion we have spoken in the highest possible terms of this splendid work. It reflects the greatest credit upon Mr. Quain, as well as on Mr. Maclise, the artist, and is really a national production. Every Book Club, every Medical Library, every Medical Public Institution should possess and patronize it. And every wealthy member of our profession should not fail to subscribe to a work like this, one of a class not sufficiently seen in this country.

On a future occasion we intend to present a connected view of the practical portion of the letter press. In the mean time, we trust that our recommendations will not have been altogether in vain.

Spirit of the Foreign Periodicals.

FUNERAL ORATIONS ON BARON LARREY.

THIS celebrated military surgeon, of whom France has for many years been most justly proud, has at length been gathered to his fathers, full of years, and honour and renown. Few men had passed through a more stirring and eventful life, and we sincerely trust that he has left behind some faithful records of what he has seen, heard, and thought, during the memorable period of his active career. Most of the particulars, which we are about to communicate, are derived from the funeral oration pronounced by M. *Breschet* over the tomb of the deceased, in the name of the Academy of Sciences of which the deceased was so distinguished a member.

Jean Dominique Larrey was born in 1766—three years, therefore, before the celebrated 1769, which gave birth to so many distinguished men, *Napoleon*, *Wellington*, *Walter Scott*, *Goethe*, &c.,—at the little village of Bandeau, near Lagneres-de-Bigorres, in the South of France.

He had the misfortune to lose, in very early life, both his parents, and was indebted to a kind abbé of the neighbourhood for his early education. His paternal uncle, who practised surgery at Toulouse, subsequently took charge of him, directing his classical studies and then introducing him to medical pursuits.

For seven years he diligently pursued them, and, at the age of 22, was admitted as a surgeon into the military marine of his country. He sailed from Brest in the frigate *La Vigilante*, in the year 1787.

Soon afterwards he returned to France, and was a witness of that "tourmente revolutionnaire," which destroyed every thing, to create them afresh on new and wider bases. At this time he acted as a house-surgeon (chirurgien interne) in the Hôpital des Invalides. In this post he remained for several years, and then, receiving the brevet of major-assistant-surgeon, he proceeded to join the Army of the Rhine. He very early took an especial interest in improving the *ambulances*, or moveable hospitals, and to him we owe the invention of the *ambulances volantes*, which have contributed so much to the relief of the wounded on the field of battle. The importance of these most valuable carriages was early perceived by the government; for we find that, in 1793, *Larrey* was pointed out to public gratitude in the dispatch of General *Beauharnois*, after a battle fought near Mayence in July of that year. "Among the brave, whose intelligence and activity have brilliantly served the Republic on this day, I must not pass over Surgeon-major *Larrey* and his comrades of the 'ambulantes volantes,' whose indefatigable exertions in dressing the wounded have diminished the afflicting horrors of the engagement, and have added lustre to humanity itself, by contributing to save the defenders of our country."

In 1794, he was appointed surgeon-in-chief of the fourteenth army of the Republic, and proceeded to Toulon, where he formed a close friendship with the then young officer of artillery, whose glory subsequently filled the world with astonishment. About this time, a medical school was established at the Val-de-Grace, and *Larrey* was named the professor of surgery; but he was not allowed to remain there long, as very soon afterwards he was summoned away to active service in the field.

At the special request of Buonaparte, he was entrusted with the care of organising the light *ambulances* of the Army of Italy; and the following year, 1798, he accompanied the famous expedition to the East. ... ...

"It has been often said that the campaign in Egypt and Syria is by far the most poetical episode in our military epopœa of five and twenty years; it was also one of the most brilliant parts of *Larrey's* career. Oh! if we could but see the many letters which at this time were addressed to him by *Buonaparte*, and the other chief officers of the army, what an animating and noble retrospect would it recal to the mind! *Berthier* has told us that he has often seen him, at the head of his noble associates, dressing the wounded at the very foot of a breach, and under the hot fire of a battery.

"During the celebrated siege of St. Jean d'Acre, he rushed amid the thickest of the fight, and while balls were whizzing around, he tied the external carotid of the future Duke of Padua. It was he too who saved the lives of *Duroc*, *Lannes*, and *Eugene Beauharnois*, by his admirable intrepidity and professional skill."

In Egypt and the deserts of Lybia, where the French army was decimated by the heat of the climate and all sorts of privations, and where the soldiers suffered so much from the scarcity of water, we find that *Larrey*—instead of providing himself for his own use, with chocolate, biscuits, &c., *as he was advised to do by the general-in-chief*—always loaded his pockets with lint and a variety of cordial medicines, that he might be at once ready to afford relief and comfort to the wounded. At the battle of Heliopolis, he tore up his own linen for the use of his patients; at the siege of Alexandria, when provisions ran short, he sacrificed his horses to make broth for them—an expedient to which he afterwards had recourse on more than one occasion, as at the island of Lobau, after the battle of Aspern, (when the distress was so great that even Marshal Massena was glad to partake of this "triste repas,") and again during the disastrous retreat from Moscow.

At Jaffa, while the plague raged around, and although nearly twenty of the medical officers and all the servants of the hospitals had already fallen victims to it, he betrayed no symptom of fear, but calmly and devotedly waited upon the sick.

Let us hear what "le plus grand genie des temps moderns, et la premier Capitaine de notre siecle et des siecles passes" once said of *Larrey* to a deputation from the Pyrenees: "Your fellow-countryman is an honour to humanity by his disinterestedness and courage; he has saved the lives of a great number of our soldiers in the deserts of Lybia, by giving them a little fresh water and spirits, when he had the greatest need of taking it himself."

M. *Larrey* subsequently accompanied our armies wherever they carried our victorious standard, into Germany, Holland, Italy, Spain, Poland, and Russia, and in all countries his indefatigable zeal and noble generosity were the theme of universal applause. In 1802 he was appointed chief surgeon of the Consular Guard, and two years subsequently he was in the first list of the members of the Legion of Honour. He afterwards became inspector-general of the Service of Health, and chief surgeon of the Imperial Guard.

On the field of battle at Eylau, he displayed such admirable courage and skill in relieving the wounded, that the Emperor created him *Commandant* of the Legion of Honour; and no less did he distinguish himself at Wagram, from which he derived the title of the barony which was bestowed upon him. After the actions at Somo-Sierra and Benevento, he caught the typhus fever, by attending with his usual devotedness on the wounded English as well as the French soldiers. Chief surgeon of the grand army from the year 1812 to 1814, his energies and skill seemed to rise with the very magnitude of the difficulties which he had to encounter. The battle of Moskwa, like the plague of Jaffa, found him the more untiring in his labours of humanity, just in proportion as death deprived him of many of his assistants.

From this period the historian must date the commencement of those sad disasters which first shook, and subsequently overthrew, the Imperial government.

Larrey bore his share in all of them. "Who can tell," says one of his animated eulogists, "all the acts of bravery, of self-denial, and firmness which he displayed on every occasion; all the unweariedness of his great professional talents, all the energy of resistance which he displayed against the rude shock of public calamities, and the more poignant grief of private sorrows? But these were not the only features of his great mind. No one better understood the high independence of our profession, and, understanding, none knew better how to vindicate its claims. *Larrey* not only possessed the courage that meets danger face to face; he had the still rarer fortitude of resisting injustice from all and from every one." He gave a memorable proof of this after the battles of Lutzen and Bautzen, when he boldly denied to Napoleon the truth of the rumours that were generally believed of many of the soldiers having wilfully maimed themselves, in order to escape service. It was well-known that the Emperor had allowed himself to give credit to the atrocious report.

He had already ordered that all the accused should be brought together in the entrenched camp at Dresden, and a court-martial was appointed to judge them, and sentence the guilty to be immediately shot. *Larrey* was appointed president of the medical board on the occasion. On the evening before the day on which the examination was to take place, a *personage* (was this Napoleon himself?—*Rev.*) whose interest was to find some guilty in the affair, (!) ordered him to name, on the morrow, four criminals in each division to be executed upon the spot. Filled with affright and indignation at having such an order put into his hands, *Larrey* at once sent in his resignation, and would have left the army, if a confidential person had not remonstrated with him, and urged him to delay his intention for some time, reminding him that his services might be of the greatest use to the threatened victims. The examination lasted for four days, and was most searching and minute. *Larrey* satisfactorily showed that the accused were innocent, and the force of his reasoning was such, that they were all at once acquitted. He then addressed a report to the Emperor, and, supposing that he would necessarily offend him by his conduct, he quietly expected his dismissal. But Napoleon had the instinct of sublimity, and great and noble actions exercised a mastery over him. (What a prostitution of language, *if* it really was Napoleon himself who gave the order of the preceding evening!) That very night Baron *Fain* called upon *Larrey* with a most complimentary letter from the Emperor, in which he lauded his heroic conduct, and bestowed on him an annual pension of 3,000 francs from his own purse. This pension, which had its origin in such a noble source, was afterwards, in 1818, secured to him by law. The few and simple words, which Napoleon himself addressed to him, will never be forgotten: "A sovereign is indeed fortunate in having a servant like you."

On the Emperor's return from Elba, *Larrey* was reinstated in his former post of honour and danger, and he accompanied the army to the Netherlands. The disastrous day of Waterloo completely broke his patriotic spirit; dangerously wounded himself and made prisoner, his only consolation was that at the close, as at the commencement, of his military career he had shed his blood in his country's cause. During the fifteen years of the restoration, he lived in retirement; but the revolution of 1830 found him as zealous and active in the discharge of his labours as he was at Aboukir or at Moscow. It was indeed to this very circumstance, his ardent and untiring enthusiasm in the promotion of the comfort and welfare of the army, that the immediate cause of his death was attributable. He had always taken a deep interest in the expedition to Algiers; but, as he was under the cloud of court disfavour, he was not at all associated with it. "A regular correspondence however was established between him and myself, his representative in Africa," says M. *Guyon*, the ex-surgeon in chief of the army of occupation; "every courier brought me fresh instructions; every fact in surgery which occurred in *the young army*, as he used to call it, became a topic of deep

and interesting discussion by him. He repeatedly expressed to me his strong desire to visit us personally, and regretted that he was not with the brave troops, sharing in their toils and hardships. His wishes were after much delay fulfilled. *At length, he wrote, I start for Algiers, I am about to see Africa, and our young and brave army there.* His arrival was hailed with delight by every one, from the humblest soldier to the highest officer. The shores of Algiers, Bona and Oran resounded with enthusiastic shouts, welcoming the old surgeon of Acre and Mount Tabor; and the young aspirants after professional fame bowed themselves with pious reverence before him, whose name was associated with all the glorious reminiscences of the Empire. He felt himself once more amid the stirring life of camps and cantonments, and his whole soul seemed to be absorbed in examining into every thing connected with the health of the troops. Ever on the move, either on foot or on horseback, the old man fairly wore out the strength of all his fellow-labourers. In short, he felt himself again a young man; and one would have said that he was just entering upon that brilliant career that, alas! was now drawing so near to a close. He had now obtained the fulfilment of his wishes; for he more than once said to me, *when I shall have seen Africa, I shall die contented;* and this was the answer that he always gave to his friends who had endeavored to dissuade him from making so fatiguing a journey to an unhealthy climate at his advanced age."....."On his return from this triumphal expedition, death awaited him on the shores of his native country; it fastened upon its prey from the moment of his debarkation, and with sure but insidious steps achieved its fatal work on the road from Toulon to Lyons, where he died."

In the preceding account, we have omitted to mention that *Larrey* was for several years chief surgeon of the Hôtel des Invalides, one of the Council of Health of the Metropolis, a member of the Institute of the most learned bodies both in France and in foreign countries.

His writings have a singular dramatic charm, from the exceeding interest of the scenes and persons that are brought under our notice, and the graphic details of a multitude of battles and sieges, in which the author bore a part. In 1803, he published a *Relation Historique et Chirurgicale de l'Expedition de l'Armée d' Orient en Egypte et en Syrie;* in 1807, a very important memoir on the amputation of limbs after gunshot wounds, in which he strongly inculcated the advantages of an immediate operation; in 1812, three volumes (the fourth appeared in 1817) of *Memoirs de Chirurgie Militaire et Campagnes;* in 1821, a *Recueil de Memoires de Chirurgie*, the first volume of which is almost entirely devoted to a consideration of the advantages of the actual cautery, and more especially of that form of it which we have derived from the inhabitants of China and Japan, the *moxa.* From 1829 to 1832 he published four volumes of *Clinique Chirurgicale exercée particulierement dans les Camps et les Hôpitaux Militaires, depuis* 1792 *jusqu' a* 1832.

It is to *Larrey* that we owe the best method of disarticulating the shoulder-joint; it was he who first satisfactorily showed that the formidable operation of amputating at the hip-joint will sometimes save the life of a patient; and we may justly add that his observations on the advantages of immediate union of fresh wounds "ont fait faire un veritable progrès à la chirurgie." He was the first to point out the nature and cause of the purulent or Egyptian ophthalmia, which, since the date of our expedition into Egypt, has committed such ravages among the troops of almost every European nation; and to him belongs the merit of establishing the great advantages that may often be obtained, both in civil and in military practice, from the employment of an immoveable apparatus in the treatment of fractured limbs.

The great features of *Larrey's* character were indefatigable energy and a thorough, never-flagging zeal in the performance of his duty. The high position

that he occupied and the great responsibility of such a post as that of surgeon-general of *Napoleon's* armies, while they were in the first instance the reward of his distinguished services, served to bring out more and more the strength of his inward resolution and the confidence which he had in his own resources. Without any marked genius or brilliancy of talent,* he possessed in a high degree the more useful qualities of vigorous sound sense and great moral intrepidity, animated and exalted by the most disinterested patriotism. Even when peace succeeded to "the hoarse voice of war," *Larrey* could not rest; he wanted the excitement of

"——— the plumed troop, and the big wars
That make ambition virtue,"

to call forth the energies of his spirit; and hence it is that his most enthusiastic admirers cannot say that the last twenty-five years of his life sustained the glory of his former career. But we must not impute this to him as a blame. Few men can pass from the shock and din of stirring life to the solitude of privacy, and hope to keep up the eclat of bye-gone days; and yet this is the least fallible of all tests to try the inward greatness of the mind. With no less truth than beauty has the "grand homme" of *Larrey's* admiration been compared to the brilliant but passing splendour of a comet,

"Bidding nations fear and monarchs tremble in their capitals;"

while his mighty competitor has been likened to the light of a star that, whether midst calm or storm, shines on unchanged with a fixed and cheering brightness.

From what we have already said of *Larrey's* character, our readers will not be surprised to learn that he was sometimes blamed for a "fidelité opiniatre" in his own opinions on professional subjects. There is so much good sense, although somewhat pedantically expressed, in the following observations of Dr. *Levy* on this subject, that we shall give them without abridgement:

"This confidence in his own judgment may perhaps have prevented him from paying a due attention to some acknowledged improvements and discoveries of recent years; but, at the same time, it is a proof of a stable and thinking mind. It is better for science to be deprived of one new fact, or of a useful reform on some particular point, than to be incessantly disturbed in its foundations, and have the truth of all its acquisitions every now and then called in question. An art like ours accommodates itself but badly with the mobility which may be introduced into some others. The sciences, which issue in applications to practice, have need of much reserve and consistence; and, when it is the human body that becomes the theatre of its applications, a religious severity should preside over the trial of every novel fact or theory. Let us remember that all medical men of an elevated cast of mind, and whose experience has been accumulated during a long series of years, have uniformly based their practice on a few simple principles, whose truth they have had frequent opportunities of testing. Although besieged by the impatience and curiosity of younger men, and often worried by the presumptuous re-action of inexperienced innovators, they have remained unshaken in their principles. Let us learn to do justice to this spirit of resistance; it is to it that we owe the maintenance of the traditions of our art. If the restraining wisdom of these

* Dr. *Guyon*, the ex-surgeon in chief of the army of Africa, thinks otherwise. In his high-flown oration, he exclaims: "Larrey was born a surgeon, just as another man is born a poet or an orator; nay, he was born a military surgeon to carry the blessings of his art amidst the tumult of camps and the din of battle. This was his lot on earth, and this to him was life. He was never altogether himself after the fall *du grand regne;* peace did not suit that exuberance of activity of the old head-surgeon of the grand army." All this and such-like oratory seems sad nonsense to us dull natives of this prosaic island.

patriarchs of practice did not balance the force of the new ideas that are continually springing up, every century would find it necessary to reconstruct the entire edifice of human knowledge; science, like the ephemera which dies the day that it is called into existence, would scarcely outlive a single generation, and its doctrines would be in a state of as constant change, as the modes and habits of fashionable life."

We like the tone of these remarks, and quite coincide with Dr. *Levy* in their general import. Much more mischief is done in our profession by hastily adopting every novelty that is suggested, than by somewhat obstinately adhering to old practices. How comes it, we should ask, that every physician, as he advances in years and experience, lessens more and more the number of the medicines and the variety of the prescriptions that he uses?—simply, because he learns that the only rational mode of treating diseases is based upon a very few principles, and that the great skill required is to accommodate and to *time* the few remedies that are really useful.

Larrey belonged to the class of men that we are now alluding to; and we cannot therefore wonder at his somewhat disdainful rejection of many of the proposals of recent years. His professional, like his moral, character was regulated by a few simple principles; he was thoroughly sincere in all that he did or said; he never allowed himself to be influenced by merely temporary circumstances; and nothing could ever induce him to swerve from what he considered to be his duty. Although far from regardless either of wealth or of renown, never was the desire of either the moving spring of his actions. His first and best reward was to be useful to his fellow-creatures; he had an enthusiastic love of humanity, a deep-felt respect and an ardent charity for mankind; he watched over his patients with all the solicitude of a father; to attend upon them was his sweetest labour, to save them his dearest happiness.

We must not omit to give the perorations of the three discourses of MM. *Guyon*, *Levy* and *Breschet*, from which we have selected the preceding observations: they are fair specimens of the usual close of the "oraisons funebres," that our dramatic neighbours are so fond of.

"Adieu, Larrey! (it is M. *Guyon* who speaks) adieu in the name of Algeira, in the name of that young and brave army which thou so much wished to see before death, and which thou left but with thy latest breath!.....Adieu! man of the warmest heart and of the most devoted zeal!.....Adieu! the earth will lie light upon thee; it never bore heavy on a man of worth!..... Adieu, Larrey!"

Dr. *Levy's* is in somewhat the same strain of eulogistic ejaculation.

"Adieu, our revered preceptor, adieu, Baron Larrey! may the peace of God descend with our tears into that tomb where now you lie; may the pure glories of another life be opened up to your soul, associated in eternity with those of the heroes of whom you have been the companion, the friend, the rival, and often the preserver, with the aid of Heaven!"

M. *Breschet* is much less poetic: he 'commence le fin' of his speech with an anecdote: "Do you know Larrey?" said Napoleon to Dr. Arnot at St. Helena.—"I only know him by repute," answered the Doctor. The question occurred in a conversation on the comparative losses after a battle of the French and English wounded. 'What a brave and honourable man is Larrey,' exclaimed the Emperor; 'what zeal he showed for the army in Egypt, whether in crossing the desert, or after the affair of St. Jean d'Acre, or afterwards in Europe! I had a great esteem for him, that has never changed. If the army ever raises a column to gratitude, they should erect it to Larrey!"

"Here, gentlemen, I must stop: I perceive, but too late, that all my discourse has been useless; a single word will suffice; it is a eulogium in itself, and stamps the name of Larrey with the seal of immortality. You know what I allude to;

you all know the glorious testament of the greatest genius of modern times: 'He is the most virtuous man I have ever known.'*

Let us then erect to the glory of Larrey and to that of our profession that column of which the Emperor spoke, and inscribe upon it the words of Napoleon: "posterity will not fail to recognize the man of worth, to whose memory we this day pay the last sad duties."

We may in conclusion mention that the illustrious deceased was buried in the Cemetery of Pere la Chaise, and that the funeral was attended by several of the leading military authorities in Paris, by deputations from both Academies, from the Polytechnic as well as from the medical schools, and from the Hôtel des Invalides, by all the staff of the Val-de-Grace, and by a vast number of military surgeons, old soldiers, &c. The ribbons of the pall were held by Count *Rambuteau*, the Prefect of the Seine, General *Petit*, the Commandant of the Invalids, and by MM. *Breschet* and *Moizin*. The chief mourner was M. *Hippolyte Larrey*, the son of the deceased.

REMINISCENCES OF A MILITARY SURGEON.

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It see that M. *Ribes*—who, after a long and honourable service in his country's cause, was appointed some years ago, (on the death, if we mistake not, of M. Desgenettes,) to the important post of chief physician to the Hôtel des Invalides—has been recently "mis à la retraite," in consequence of the increasing infirmities of old age. He justly complains of this unhandsome treatment on the part of the government, and has addressed a very amiable letter to the surviving original members, now only five in number, of the Medical Society of Emulation, founded in the first outbreak of the revolutionary torrent when it swept away all the institutions of the former *regime*. Of the society, *Bichet*, *Richerand*, *Dupuytren*, *Alibert*, *Mare*, &c. were among the earliest associates; and, ere long, it ranked among its members most of the distinguished men both in France and in many foreign countries. The names of those old friends and fellow-students are MM. *Bretonneau*, *Dumeril*, *Husson*, *Renauldin*, and *Therrin*; and it is to them, with a very graceful propriety, that M. *Ribes* tells the story of his active career, "since life's morning march, when his bosom was young."

"In 1792, I entered," he says, "the Hôtel des Invalides, on the presentation of M. *Sabatier*. In the following year, I and many others were sent off, by order of the Committee of Public Safety, to the armies of the Republic. From this time down to the abdication of the Emperor, I was constantly engaged in active service, having been present in twenty pitched battles, seventeen combats, and three sieges. In Spain, on the black mountain, I was at the side of the general-in-chief Dugommier, when he was struck by the fragment of a shell, which crushed the right side of his chest and exposed the lung: he lived only ten minutes afterwards. At the battle of Eylau, in February, 1807, I was made a member of the Legion of Honour. I can never forget this memorable and most bloody conflict. A dense snow fog came on during the fight, and had the effect of throwing the division of the dragoons into confusion. These soldiers, so brave on all occasions, fell back in disorder on the surgical ambulance, where our wounded were suffering most severely. At this moment I was assisting my illustrious friend, Baron *Larrey*, to perform an amputation of the leg; and, not-

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* The Emperor, among other legacies to his favourite officers, bequeathed 100,000 francs to Larrey, with these memorable words: "C'est l'homme le plus vertueux que j'ai jamais connu."

withstanding the confusion and tumult, he remained as calm as if nothing unusual had happened. On that day, this truly great surgeon so exerted himself, without almost any intermission, for the relief of the wounded, that he was afterwards threatened with paralysis of the bladder, from having retained his urine for too great length of time."

. . . . . "After the battles of Bautzen and Wurchen, in May, 1813, and about five o'clock in the afternoon, poor General *Bruyere* had both his legs most severely fractured by a cannon-ball. I amputated them on the spot, and had no sooner finished the operation, than I mounted my horse to join the Emperor. On my way, I met Marshal *Duroc* and General *Kirschner*, engaged in conversation. I was only a few paces behind them, when a cannon-ball whizzed past me and struck both officers. The latter fell from his horse and expired at once; the former sat for a few seconds, and then fell also. I had him conveyed into an adjoining farm-house, and ere long the Emperor, accompanied by his staff, arrived to see his unfortunate lieutenant. The interview was one of the most affecting I ever witnessed. Taking the hand of the wounded man, and pressing it to his bosom, he said, "Duroc, adieu! we shall meet in another life; there we shall not be exposed to the jealousy and faithlessness of mankind.' The Marshal replied, in firm accents, "Sire, I trust that you may find some one as sincerely attached to your person as I have been. I entreat you, Sire, to retire from this place of grief; it is too sad and distressing for you.' *Marmount* drew the Emperor gently by the arm, and induced him to withdraw; he exhibited all the signs of the deepest affliction.

"*Duroc* expressed a wish to see his friend *Larrey*, who, after examining the wound, at once pronounced it inevitably mortal. By order of the Emperor, I remained constantly by his bed-side; he lived 27 hours after receiving his dreadful wound; not a groan of complaint escaped from him, and he retained his consciousness almost to the very last. I embalmed the body, and it was subsequently conveyed to Paris, to be interred in the Hôtel des Invalides."*

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"I returned to Paris in January, 1814, after the disastrous battles of Leipsig and Hanau, worn out with the fatigues and privations to which I had been exposed in the Russian and Saxon campaigns, and hoping to repose for some time in the bosom of my family. But I had not been four days with them when I received orders, at eleven o'clock at night, to repair at once to Fontainbleau, in order to accompany the Pope early next morning on his return to the Holy States. The weather was miserably cold, and the aged pontiff was in a most infirm state of health. Fortunately he bore the journey better than we could have expected, and he arrived in Rome in perfect safety. This was most fortunate for me, as very unpleasant surmises would unquestionably have been made had any calamity occurred on the way. On my return to Paris, the Emperor had abdicated."

. . . . . "In the course of my campaigns, I have met with two great epidemics of typhus fever. The first was in Spain. The French army under General *Dugommier* was about 25,000 strong, and of this number there were nearly 10,000 affected with the fever: the mortality was very great. After three months most harassing fatigues, I fell sick myself. The second

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* It was at this time that the Dutchess of Montesquieu, the governess of the young King of Rome, wrote to the Emperor in these words: 'Sire, by the death of your two friends, *Duroc* and *Bessieres*, the finger of God points to you to stop.' Fortunate for him had he done so! but, alas! both for himself and his people, an insatiable and remorseless ambition continued to hurry him on, until at length he was cast down from his throne, and chained, a second Prometheus, to a desert rock.

epidemic occurred during the campaign in Saxony, and spread from Metz to Paris. It would be difficult to estimate the extent of its ravages; they were so great."

M. *Ribes*, with the pleasing garrulity of age, proceeds to enumerate the many acts of devotion and zeal which he displayed in the performance of his duties, whether during his active life on the field, or in his quiet seclusion at the Hôtel des Invalides; and closes his tale, "wherein he speaks of most disastrous chances, and moving accidents in *camp* and field," by appealing to the long-established usages of the public service to prove his claims on the existing French government. "Had my old friend and comrade, Marshal Moncey, still survived," says he, "I should not have required any other to stand up in my defence. But now, deprived of his inestimable support, I must look forward to the question respecting old military surgeons being openly and fairly canvassed in the Chamber of Deputies, and we shall then see whether court-favour and intrigue are to triumph over right and justice."

ANNALES MEDICO-LEGALES BELGES. NOTES OF A TRAVELLER.

We have received the 3d, 4th, and 5th Numbers of these Annals, edited by Dr. *Dejaegherc* of Courtrai, and our friend Dr. *Crommelinck*, of Bruges. Almost the whole of the numbers in question is taken up with a valuable and most interesting Report on the Lunatic Establishments of England, France, and Germany, addressed by the latter gentleman to M. *Nothomb*, the minister for the interior of the Belgian government.

Dr. C. is evidently a man of great energy of character, and of a most active professional zeal. There is moreover a fine spirit of Christian humanity in his exertions for promoting the amelioration of the condition of the insane in all countries, and especially in his own; and we doubt not that his labours will be crowned with success.

He has established correspondence with many of the leading physicians of his country, as well as in France and Germany, to aid him with communications on all medico-legal subjects for the Annals, of which he is the principal editor: we need only mention the names of Drs. *Conolly*, *Corsellis*, *Voisin*, *Folle*, *Petrequin*, and *Dieffenbach*, to show what able collaborateurs he has obtained. As we have agreed to exchange the *Medico-Chirurgical Review* for the Annals, it will give us much pleasure to draw the attention of the English reader occasionally to their contents.

The Report will prove a very instructive one to his countrymen, and will, we trust, stimulate them and their government to improve the state of the lunatic establishments throughout Belgium.

It is fortunate that the unhappy inmates, deprived of God's best and greatest gift, have found so philanthropic an advocate of their cause as Dr. *Crommelinck*. He seems to have been delighted with what he saw in England.

The English Nationality.—"England," says he, "is justly celebrated for its spirit of nationality: an Englishman never talks of his country but with a holy respect—(hear that ye croaking Radicals!)—he speaks of it as of a planet, whose astre should illumine all the other nations of the earth in the march of civilization; and if he shows you any of the sumptuous edifices or monuments of his country, pride and vanity sparkle in his eye."

Dr. *Crommelinck* certainly does not exaggerate when he asserts that the hospitals and infirmaries in this country greatly exceed, not only in external decorations, but also in the more essential particulars of internal cleanliness and comfort, most of those on the Continent. "The lunatic asylums in Belgium,

are," he says, "usually ugly externally, and most filthy at the same time inside; all the windows are guarded with cross iron bars; and the inmates are but too often most shamefully neglected. As might be anticipated from such a state of things, the proportion of the cures that take place in such establishments is much smaller than it ought to be."

Climate of England.—At all events it cannot be to any superiority of climate that the greater success in the treatment of mental disorders in England is to be attributed to; for we are informed by our amiable author that, "except for the two months of July and August, England is almost continually buried in a thick fog (!), amid which objects at a little distance seem to be springing up (à l'état naissant) and to be half blended with the clouds." . . . . . "Like the fogs, rain is never out of season in England, and nothing is less to be depended upon than the weather. But in spite of the humidity of their climate, the English do not suffer much from it; as the floors of their houses are never paved with tiles, as in ours, and besides they clothe warmly and live generously." Oh! John Bull, you really do not know one half of your mercies. What with your sea-coal fires, your *bif-ticks*, and rashers of bacon, your XX stout, your wooden floors, and a multitude of other good things, you are a great deal better off than most of your neighbours, notwithstanding the national debt, income-tax, corn laws, and innumerable other grievances with which an unfeeling government oppresses you. But John, were you aware that you "seldom go out of doors without a cloak, which is carried under the arm, when the weather is warm, or a momentary absence of fog allows you a blink of the sun?" You may not have known this before; now, however, that an observing stranger, who came 'among you taking notes,' tells you it is so, we trust that you will believe and be thankful. But this is not all; "in no season of the year," says Dr. C. "is a fire ever wanting in the rooms; and, as to public buildings, it is all but commanded by law that all the stairs and passages should be warmed by means of caloriferous tubes."

M. *Crommelinck*, with a most pains-taking assiduity, gives a minute description of all the public and many of the private lunatic establishments in England. As a matter of course, we cannot follow him in his tour, although every now and then we are much tempted to do so by the flattering encomiums he passes upon almost every thing he saw. We must however allude to one or two topics of his praise.

Bethlem Hospital.—Dr. C. has given a full and particular account of the ceremony of laying the foundation-stone of the new buildings two or three years ago. There was *Pierre Laurie* (Sir Peter, do you recognize yourself in your classic name?) arrayed in all the insignia of high office, and accompanied by the *Archbishop of Canterbury*, *Lord John Russell*, and many of the leading men of the metropolis; there was the band of the Life Guards playing high and stirring airs; there were the children of the orphan and other hospitals chanting solemn music; and, around all, the vast multitude assembled to witness the imposing ceremony. The Doctor was so delighted with the *ensemble*, that he has actually given a copy of the prayer offered up by the officiating clergyman, and the speeches of the president and other gentlemen.

He subsequently paid a visit to inspect the hospital, and we need not say how minutely we are informed of every thing he saw. He was ushered in by a *huissier*, who wore a somewhat singular but withal a very imposing uniform. Such trifling particulars are not to be neglected. "I felt myself," says he, "penetrated with an involuntary respect, which singularly contrasted with the disgust and horror one experiences on entering our hospitals! The numerous cures that are effected in Bethlem, are entirely attributable, in his opinion, to the *comfort interieur* which the patients enjoy, and to the great cleanliness in every

department of the establishment. He could not but think, when he saw all this; how different was the condition of his own countrymen in a like condition; badly fed, harshly treated, and often confined in dirty unwholesome chambers. He mentions one circumstance, which was new to him, and may perhaps not be known to all our readers: we give his own words.

"To do away with even the slightest idea that this asylum should be considered as a prison, English philanthropy has carried its refinement so far that the iron bars have been removed from the windows even of those rooms in which turbulent and unruly patients are confined, and the panes of ordinary glass are replaced by panes of such thickness, that they will resist the heaviest blow of a stick; the governors gave me permission to put this to the proof with 'mon sixpence,' and I can assure you, Monsieur le Ministre, that I did it with right good will."

The asylum at *Wakefield* he mentions in terms of the greatest commendation, and attributes much of its high repute to the skill and kindness of Dr. and Mrs. *Corsellis*. The system of keeping the patients engaged in regular and active occupations has worked wonders under their most judicious management.

The asylum at *Hanwell*—the largest in Great Britain, and which contains nearly a thousand inmates—is particularly described. It is under the medical superintendance of Dr. *Conolly*, who, it is well known, has been one of the most active promoters of what is called the non-restraint system. Our author, Dr. *Crommelinck*, like many other wise men, is not inclined to assent to all the philanthropic enthusiasm, which has within the last year or two been exhibited on this subject. While he disapproves of all unnecessary coercion, and, as a matter of course, condemns most vehemently the treating of lunatics as if they were criminals, he is far from going the lengths of Dr. *Conolly* and his disciples. Perhaps our readers may have noticed a short letter of Dr. *Crommelinck* on this subject in a recent number (for January last) of the *Medico-Chirurgical Review*, "la publication la plus importante et la plus repandue de l'Angleterre;" and in his present work he resumes his remarks at greater length, exposing with no little earnestness the serious errors which Dr. *Conolly* has committed in carrying out *à l'excès* his favourite doctrines. Like all enthusiastic reformers—by the bye this word seems to be rather at a discount now in this country—Dr. *Conolly* has no doubt gone a good deal too far, and has introduced and pushed on his innovations with more zeal than discretion.

But we have no intention to discuss this weighty subject at present; so we shall leave Hanwell, pass by the asylum at Lincoln, and come to Gloucester, to pick up a scrap of our author's Notes which he left there.

Character of the English.—Alluding to the deference and respect that are usually paid by Englishmen to their superiors in rank—this must be the phrenological sentiment of *veneration*—Dr. *Crommelinck* remarks:

"On the one hand religion—and certainly there is no country in Europe where this has greater influence—and on the other, the principles of education, either primary or secondary, tend equally to impress on the mind of an Englishman a kind of veneration for all those who are his superiors in wealth and station. We of other nations, with our democratic ideas, have some difficulty in understanding this sort of deference which the poor pay to the rich, the plebeian to the aristocrat, the citizen, however wealthy, to the peer, and all ranks alike to the sovereign. To be fully convinced of its perfect reality, one requires to have observed and studied it on the spot, and to have been in a position to enable you to ask of a younger son of a high family, if he does not bear a grudge to his elder brother, who is rolling in wealth, while he is obliged to take to some profession to acquire a respectable livelihood in the world, at a distance from that class of society amid which he was born and educated;" (the latter paragraph is

not quite correct; no member of a high family finds any difficulty in having the entrée to the highest society, if there be no blot or flaw in his character.)

Lunatic Establishments in France.—We shall now accompany our author across the channel, and visit with him some of the leading lunatic establishments in France; and first of all let us direct our steps to the hospice, called *Maison Royale de Charenton*, situated about two leagues from Paris. It was at this immense asylum that those great men *Pinel* and *Esquirol* first saw the dismal scenes of a mad-house, and it was by the information derived from thence that they prepared themselves for that mission of philanthropy and justice to which they so nobly devoted themselves. What are *Esquirol's* own words on the state in which the miserable inmates were kept about the beginning of the present century.

"I have seen them naked, or only covered with rags, and having nothing but a little straw between them and the cold damp pavement on which they were lying. I have seen them fed with unclean and insufficient food, without water to quench their thirst, almost deprived of air to breathe, and totally destitute of the most necessary articles of life. I have seen them abandoned to the brutal violence of men that were no better than gaolers, and confined in close noisome dark cells, chained one to the other, and where even the wild beasts, which the vanity of almost every government maintains in their capitals, would not be kept."

Now hear, reader, the comment with which Dr. *Crommelinck* follows up this appalling picture of "man's inhumanity to man:"—

The Arrogance of the Parisians.—"When *Esquirol*, in 1818, proclaimed in these indignant terms, the infamous abuses that used to prevail in many lunatic asylums in France, could we suppose that he was only giving a flattering picture of what still exists up to the present day in Paris, that most arrogant (*pretentieux*) of cities, which wishes the world to believe that it is the centre of civilization and refinement? I confess that I was seized with horror and astonishment on my first visit to our own asylums, and blushed with shame for my country at the state in which I found them; but even our miserable institutions are but feeble specimens of what I have met with in the metropolis of our powerful and rich neighbour. Although my heart was penetrated both with grief and indignation, I could not but feel happy at our superiority in this respect, as well as in many others, over that France, which takes upon herself to express her pity for us, that she cannot send us a prefect to teach us how to live, or give us a name among the nations of Europe."

Dr. C. gives a most unfavourable report of the uncleanliness and stinginess (*la malpropreté et la mesquinerie Françaises*) observed in almost all the hospitals and charitable institutions in Paris. One part, a very small one, of the Charenton, is dignified with the appellation of the *Chateau*, and is of modern construction; it is occupied entirely by the female inmates of the better class. Even here, we are told, the state of cleanliness is only *Française;* and as to the other parts of the asylum, "my pen," says Dr. C. "refuses to narrate the infamies that I saw. I verily believe that in no part of France are the pigs worse lodged than many of the unfortunate inmates of the Charenton, Bicetre, and Salpetriere hospitals. *Esquirol* tells us that he has seen them covered with rags, I have seen them naked: he has seen them lying on straw, I have seen them stretched out on the bare stone floor; he has seen them deprived of fresh air, I have found them breathing a most polluted atmosphere, and in the midst of all those horrible discomforts, which loudly call down disgrace and vengeance on the heads of those whose duty it is to correct them."

There are between seven and eight hundred inmates in the Maison Royale de Charenton. M. *Foville* is the head physician; he resides in Paris, but visits the hospital daily. Let us now hear what our author says of the *Salpetriere.* This

is an enormous *hospice* or asylum for old women; there are not fewer than 5000 inmates within its walls. Of this number about 1500 are more or less insane. The remaining 3,500 consist of prostitutes, who have been "mises à la retraite," in consequence of old age or infirmities; of indigent old women who are blind, paralytic, or otherwise helpless; of old women afflicted with incurable diseases; and lastly, of those who are labouring under some chronic malady, but which is not necessarily incurable.

Dr. C. mentions in terms of the highest praise the two head physicians of the insane patients, MM. *Falret* and *Mitivié*. Much has been done by these gentlemen for the comfort of the poor creatures entrusted to their care. There is not, indeed, space enough out of doors to enable them to have much occupation in the air; but every thing has been done, under the direction of their enlightened physicians, to keep them usefully and pleasingly engaged within doors, with music, reciting aloud, acting plays, dancing, &c. Dr. C. heard the first scene in *Moliere's* Tartuffe better recited than in many theatres; and, on the whole, he was much gratified with the undoubted proofs which he saw of the progress that many of the poor creatures had made in reading and writing. At the same time, he expresses his regret that to these occupations cannot be added more out-door bodily exercise.

The *Bicetre* is an institution similar to the Salpetriere, but devoted exclusively for the reception of men. It contains about the same number of inmates, and of these, nearly the same proportion consists of insane patients. These are under the admirable superintendence of MM. *Voisin* and *Leuret*, who have certainly worked wonders in the field of philanthropic labour to which they have devoted themselves. The state of the buildings of the *Bicetre* is, in some parts, even worse than that of the Salpetriere; but it possesses the great advantage of having a few acres of open ground, where the patients can take exercise. There is a professor of music, one of the leading pupils of the Conservatoire, resident within the walls, and already great progress has been made in instructing the men in this most useful amusement. They have each a copy given to them of an excellent collection of songs, many of them of a consolatory religious character, which has been published for their express use; and, judging from the subjects selected, we should certainly think highly of it.* Prefixed to this little work is a well-written and affectionate address by the chief-physician, M. *Leuret*, whose name is so well known as one of the most indefatigable philanthropists of the present day.

Here are the first few sentences of this address:—

"This collection has been composed for you; receive it with affection; read and try to learn it by heart, in order that you may soon be able to sing all together. After your daily work, whether in the fields or in the workshop, is over, no exercise will be so useful to you as that of singing. In it you will find a solace for your griefs, and a certain remedy against weariness of mind. The chagrin that you experience at being separated from your families and your former occupations will become every day less, and those among you, whose minds are restless and unquieted, will not fail, ere long, to enjoy a tranquillity of feeling most favourable to their recovery."

Besides singing, the men are taught to recite aloud; also writing, geography, and arithmetic.

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* The words of most of these songs have been selected from the writings of *Racine*, *Rousseau*, *Lamartine*, *Chateaubriand*, *Beranger*, &c. and many of the airs have been composed by *Wilhelm*, *Elwert*, and *Mainzer*. The compositions of the last-named gentleman are certainly of no ordinary merit: we have rarely heard music express better the sentiment of the words than in many of his songs.

The pleasing effects, which have been already obtained from this method and the obvious advantages that must necessarily result from diverting the mind from its train of morbid associations to useful and agreeable pursuits, will recommend the system wherever it is known.

Treatment of the Insane and of Criminals.—Dr. *Crommelinck* very judiciously remarks that nearly the same principles of discipline should be applied to the management of criminals—if we desire their reformation—as to the treatment of mental alienation. Without going to the extent of some rather hasty phrenological jurists, who regard crime as the result of physical derangement, it cannot surely be denied by any one that there is little or no chance of checking sinful passions by the mere strong arm of the law; and that, unless something be done to educate the minds of the vicious, and show them at once the pleasure and the real profit that are easily within their reach, we cannot reasonably hope for any decided improvement in prison discipline. As soon will the Ethiopian change his skin, or the leopard his spots, as the "foul bosom" will, by dint of punishment alone, shake off "that perilous stuff which weighs upon the heart." The mind has become, as it were, accustomed to the load, and it is only by substituting another of more precious weight that we can hope to disengage it; like a ship at sea, if it has not a heavy cargo of good things, it needs the more to have worthless ballast in its hold.

This is surely a very important subject, and deserves much more attention from medical men than it has hitherto received.

What a noble labour it would be, if a public body, like the College of Physicians—in concert, it might be, with the heads of the Church—were engaged in the truly philanthropic cause of testing the effects of what may be called *Moral Therapeutics* in the treatment of diseases of the mind, whether these be the offspring of deluded reason, or of wayward and guilty passions. Certainly one of the most powerful instruments of cure will be found to be a judicious system of instruction in vocal music; for thus the erring soul might easily be inspired with thoughts of peace and penitence, and be gradually led to feel a pleasure in innocent and holy amusements.

Model of a Lunatic Asylum.—But we must not be led away into a disquisition on the ethical discipline of prisons and mad-houses; and we will therefore leave Paris—where the train of thoughts came into our mind—in company with our author, and pay a flying visit to that model of a private lunatic asylum at Vanvres—a small village about two leagues from Paris, on the Versailles road—under the care of MM. *Voisin* and *Falret*. "To the most scrupulous visitor," says Dr. C. "and the most severe philanthropist, as well as to the most exacting physician, it really leaves nothing to desire, and is in all respects the *ne plus ultra* of such establishments. Perhaps there is not such another to be found in Europe. Honour, a thousand times honour, to those illustrious philosophers and disinterested philanthropists. We need scarcely say, that these gentlemen attach the very highest importance to the use of regular and agreeable occupation out of doors, whenever the weather will permit it. Within doors, dancing, music, acting of plays, cards, billiards, &c. fill up the time most pleasantly. MM. *Falret* and *Voisin* with their families, and often, too, several invited guests, sit down regularly at five o'clock to dinner, with such of the patients as are not unruly and violent. After dinner, all retire to the drawing-room, where the evening is most delightfully spent in a variety of pleasing amusements until nine o'clock, at which hour every one retires to their room, and all is quiet for the night."

Eulogy on Germany.—Having discussed at full length the merits and demerits of England and France, in reference to their establishments for the insane

Dr. C. proceeded on to visit Germany; and, as if the Transrhenal atmosphere had suddenly acted the part of the intoxicating gas upon him, he breaks forth into the following enthusiastic rapture—an exordium to the necessarily prosaic descriptions that succeed.

"Germany! the Jerusalem of science! the Holy Land, on coming into which we are seized with respect and wonder! the inexhaustible hot-bed of men of genius; happy country, where true wisdom and profound erudition shine like the stars in the firmament; where vile charlatanism has not yet sown its poison; (by-the-bye, are Mesmerism, Homœopathism, Hydropathism, &c. genuine sciences?) where good solid instruction is diffused among all classes of society! Germany, the inextinguishable fountain of all real scientific progress! Germany! which has given birth to the greatest surgeon of the present age, *Dieffenbach*, whose presence in Berlin all the sovereigns of Europe envy, and whom all have decorated with their highest honours: Germany, which still possesses a *Tiedemann*, a *Chelius*, a *Gmelin* and a *Juncken;* Germany, which salutes every day the most celebrated jurisconsults of our age, a *Zaccaria*, a *Mittermayer*, and a *Savigny;* Germany, in fine, whose people is almost universally distinguished for a spirit of devotedness and charity which often runs to prodigal excess, and by a good sense and powers of reasoning rarely met elsewhere—and yet, strange to record, this very country is full half a century behind in the solution of that question which forms the theme of the present work! Their public lunatic asylums are, on the whole, very bad, and utterly unworthy of present civilization."

Dr. C. gives a short description of those which he saw at Berlin, Dresden, and a few other places; but the details are not of sufficient interest to detain us. Indeed his amusing work has tempted us to exceed considerably the limits of our intended notice; so we must now wish him farewell, and all possible success in his truly philanthropic undertaking.

THE MICROSCOPIC CHARACTERS OF THE SPUTA IN PHTHISIS.

M. *Sandras* has been for some time past prosecuting a series of researches on this important subject. His method is to examine the sputa in small glass tubes with a microscope, of about 300 magnifying powers. The results of his examinations are, he thinks, eminently practical. "I have found," says he, "in the sputa of phthitical patients numerous globules, of a rounded shape, of a greyish-white colour, isolated from each other, and not unlike in shape and size to the globules of pus, but with this difference, that the latter are distinctly circumscribed, while the former are surrounded at their surface with a tomentose or flocky layer, which is not separable even by washing. To perceive these corpuscles distinctly, we must not have too many accumulated on the *porte-objet* at one time. They will be easily seen to be almost completely opaque about the centre, and to become gradually less and less so towards their edges."

M. *Sandras* remarks, that we are not to expect to find the genuinely tubercular sputa in every phthisical patient, nor even in the sputa of any one patient on all occasions. This is just what we might anticipate; for we well know that, besides the contents of tubercular cavities, there is always more or less of the secretion from the bronchi, &c. blended together in the matter that is expectorated.

It deserves to be especially noticed, that the tubercular globules now described as being present in the sputa of phthisical patients, seem to be peculiar to the lungs. M. *Sandras* has never been able to detect them in the pus of tuberculous excavations in other organs; he has in vain searched for them in the fluid from suppurating lymphatic glands, and from ulcers of the bowels, when these were obviously attributable to a tuberculous cause.

The chief points of difference in the sputa of common catarrh from those of

phthisis are these: the corpuscles, suspended in the former, are not separate and isolated from each other; they have not all the same size, they disappear or appear only irregularly, and then vanish from the field of vision, under the microscope; and their surface exhibits striæ more or less numerous.

M. M. *Andral* (Junior) and *Poiseuille* have been appointed by the Academy to report on M. *Sandras'* paper.

M. BOUILLAUD IN THE CHAMBER OF DEPUTIES.

Have we ever told our readers—East, West, North and South—that this most indefatigable of professors, with two or three other doctors, have recently been returned as members of parliament and entitled to wear the green uniform with silver oak-leaf ornaments on their cuffs and collars? As might be expected by his friends, M. *Bouillaud* has entered upon his senatorial duties with true professional zeal; at the first *seance*, he gave notice that he would move for a committee of inquiry in the Chamber into the important subject of typhoid fever. No one surely requires to be informed that this is one of his favourite *chevaux de bataille*, and that many is the lance he has broken with his adversaries in its defence. Like every "true and gentle" knight, one encounter only whets him the more for the dangers of another, and, despite many a rude fall he has already met with, so confident is he of the justice of his cause that he has at length resolved to give a general challenge to his brave medical compatriots—the joust to take place in Paris, under royal authority, and in the eyes of all France.....Somehow or other the matter has been strangely allowed to drop, and we have heard nothing about it of late. It would seem, however, that it was the subject of discussion at more than one of the meetings of the Academy; but the honourable members seemed, on the whole, quite indisposed to bother themselves about the challenge; the general impression being that the result of the *melée* would inevitably, as on several former occasions, terminate without any decided results, and that,—whether the judges are usually tampered with or not, it is difficult to say—each party would claim the victory. They had not forgotten the "lame conclusion" to which the *appel*, that was made five or six years ago, came, when the courteous *Andral*, the umpire that was selected by the combatants, decided that they were all "egalement bons," or, as some ill-natured people said at the time, "egalement mauvais."

But to get down from our own high horse to the plain ground of matter of fact, it would appear that the proposal of M. *Bouillaud* in the Academy did not meet with very general approbation. His plan was according to the strictest rules of mathematical accuracy; the solution of the point at issue being nothing more than a simple arithmetical calculation. A certain number of patients, affected with typhoid fever, were to be collected in one hospital, and to each ward was to be assigned a physician—or *experimentateur*, as we observe he is styled—who should treat his case according to his favourite method, whether by bleeding or by purging, by the use of the chlorides, by expectancy, &c. As a matter of course, a correct register was to be kept of every case, its severity, the length of convalescence, the issue, &c. After the lapse of a certain time, a committee was to examine the reports given in by the physicians and to declare *totidem verbis* in which ward the mortality had been least. Whether the physician of the successful ward was to exercise the right, claimed by conquering knights of old, of compelling every one they met with to succomb to their authority and to obey their edicts, does not appear. It was certainly a great oversight on the part of the high contracting parties, if this point was not definitively agreed upon; otherwise, might not the base vulgar persist in following out their own ignoble ways, and even dare to laugh at the proclamations of their superiors? Some of them have already carried

their presumption so far as scoffingly to ask if the horse, that won the victory in Paris, will be sound and mettlesome in all weathers, and in all climates, whether it be fed or not; also, if it can be insured that age and work shall have no effect upon its vigour. There is no doubt that most horses, like men, do not stand fatigue so well in hot climates, and especially when they are kept on short allowance, as under the opposite conditions; they have not so much of what is called *bottom*, to work and to be worked upon; at least such is the general opinion; but this, like many other old-established notions, may be deemed, by some of the ardent reformers of the present day, to be the offspring of mere prejudice. Meanwhile our readers may rest assured that, if the knight of the lancet's tournament takes place, we shall not fail to tell them all about it.

Results of Amputations in the Parisian Hospitals; great Mortality.

From the Memoir of M. *Malgaigne* in a late Number of the Archives Generales, it appears that the following is the mortality of the amputations in the large hospitals of Paris, during the five years from 1836 to the end of 1840. During this period, according to the Report made to the Council, 852 amputations have been performed—viz,

1 Amputation at the hip-joint.*
201 Amputations of the thigh.
3 Disarticulations of the knee.
192 Amputations of the leg.
38 Partial amputations of the foot.
8 Amputations of the metatarsal bones.
85 Amputations of the toes.
14 Disarticulations of the shoulder-joint.
91 Amputations of the arm.
28 Amputations of the fore-arm.
16 Disarticulations of the wrist.
9 Amputations of the metacarpal bones.
166 Amputations of the fingers.

1. Of the 201 amputations of the thigh, 126 proved fatal—62 per cent. Of the entire number, 46 were performed for traumatic injuries, and of these 34 were fatal; 135 for spontaneous disease, and of these 92 were fatal.

2. The three cases, in which disarticulation of the knee was practised, proved unfortunate.

3. Of the 192 amputations of the leg, 106 were fatal—about 55 per cent. Of this number 79 were performed for traumatic injuries, 50 proving fatal; and 112 for spontaneous diseases, 55 proving fatal.

4. Of the 38 cases, in which partial amputation of the foot was performed, 9 were fatal.

5. Of the 13 amputations at the shoulder-joint, (we deduct one case, as amputation of the thigh was performed at the same time,) 10 proved fatal. In 6 of the cases, the operation was performed for organic diseases, and among these there were 3 deaths; in the remaining 7 cases, it was for traumatic injuries, and proved unsuccessful in every one.

6. Of the 91 amputations of the arm, 41 were unsuccessful. In 61, the

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* Result not given: but, we have very little doubt, fatal—unless indeed it was the recent case of M. *Sedillot*, where the operation, if we remember right, was successful.

operation was performed for spontaneous disease, and in 30 for injuries; of the former 24, and in the latter 17, were fatal.

7. Of the 28 amputations of the fore-arm, 8 only were unsuccessful.

8. All the 16 cases of amputation of the wrist—in 12 for organic lesions, and in 4 for injuries—proved successful. Of the minor operations, one death occurred among the 8 cases of amputation of the metatarsal, and one also among the 9 of amputation of the metacarpal, bones. Of the 166 cases, where one or more of the fingers or toes were amputated, 24 terminated fatally.

From the tables of M. *Malgaigne*, it appears that the mortality after amputation, performed in consequence of traumatic injuries, is very considerably greater than when performed to remove chronic disease.

On the whole, a larger proportion, he says, of the female patients recovered after the operation than of the male. It would seem also that Winter is the most, and Autumn the least, favourable season of the year for the success of important operations.

M. *Malgaigne* attributes the great mortality, that occurs in the Parisian hospitals after amputations, in part to the over-crowding of the patients and the ill-ventilated condition of the wards, but chiefly to the circumstance of the surgeons having far too many patients to attend to, and to the consequent comparative neglect of the after-treatment. He very justly remarks, that if a surgeon has only 20 cases to superintend, he will necessarily give more time and leisure to each of them than if he had double the number.—*Archives Generales.*

Remarks.—The preceding table presents certainly any thing but a flattering picture of the practice in the hospitals in Paris. No one can dispute its accuracy, as the author, a metropolitan surgeon himself, has derived his information from official reports. Nearly two-thirds of the amputations of the thigh terminated fatally!—a most melancholy mortality. Yet this seems to have been about the average ratio in the practice of M. *Roux* at the Hôtel Dieu of late years: vide the last Number of the *Medico-Chirurgical Review*, p. 584.

We are not ourselves at all surprised at the results of M. *Malgaigne's* researches; there is such a reckless, we had almost said, an unprincipled love of experimenting on the part of most French surgeons, that we have no doubt in our own minds that, in not a few of the cases recorded in the above table, an operation was utterly inadmissable. But then it would never do for a patient to die before the surgeon had the opportunity of displaying his dexterity.

DISEASES OF ALGERIA.

M. *Guyon*, one of the members of the Scientific Commission that was sent by the French Government to Algeria, has every now and then communicated to the public his observations on the prevailing diseases of that country. The present remarks apply more particularly to the health of the colony during the last three months of 1841. The heat during that year was not nearly so great as during the preceding one, and there was much less sickness in consequence. The majority of the cases of disease, at least among the army, was certainly attributable much more to the fatigues and privations inseparable from war in Africa, than to the state of the weather.

The prevailing disorders were febrile *diarrhœa* and *dysentery*. The latter, which had raged in the province of *Oran* from the beginning of the year, continued its ravages there during the last three months. There were not a few cases, in which the disease terminated in gangrene of the intestines; in all such cases, there had been more or less hæmorrhage from the bowels during the progress of the attack. Ever since this province was taken possession of, dysentery

has been the prevailing endemic disease, and never has it produced a greater number of deaths than during this year, (1841.) This may have been from the number of the troops stationed there being larger than usual, and from their being occupied in unusually laborious duties.

The prevailing diseases of the other provinces are generally *intermittent fevers*, which are but little known in *Oran*. The cause of this difference may, no doubt, be traced to the circumstance of its topographical peculiarities; the soil being very dry and sandy, and there being but very little marshy ground. In one situation, there were several cases of malignant fever observed among the troops during the first two weeks of December, even although the weather was very cool at the time.

Several cases of *meningitis* occurred in the garrison at Algiers, during the last *trimestre* of 1841.* The disease, in most cases, was of a passive or chronic, rather than of an active, character. The patients, without manifesting any strong-marked symptoms, or indicating the approach of convalescence, continued exceedingly weak, and usually without the slightest desire for food. "They did not, however," adds M. *Guyon*, "lose flesh, but kept the *embonpoint* they had when taken ill. There seems to be in meningitis an arrest of the functions, which is compatible for a length of time with the continuance of life."

The disease continued in Algiers during the first three months of 1842, both in the garrison and in the city. In a neighbouring village, it seemed to assume the epidemic form. The disease was, on the whole, very fatal.

Not a few cases of *hepatitis* occurred towards the close of 1841. When the disease proved fatal, the liver usually presented several abscesses imbedded in its substance. In some cases the abscess pointed outwards, and was opened.

Since the years 1835 and 1837, when the *cholera* prevailed epidemically in Algeria, the disease has been known only in sporadic cases. Most of them recovered under prompt treatment.

The *measles* prevailed epidemically both among the military and the civil population.

A number of children died in consequence of the vicissitudes of the weather, which was called cold and wet at the time. The total mortality during the three months was 134: of this number, 45 deaths occurred among the European, 54 among the Mahometan, and 35 among the Jewish population.

One or two cases of *carbuncle* were observed. This is not an unfrequent disease in Algiers, and is often attended with a fatal issue.

The *glanders*, which had made considerable ravages among the horses and mules in Algeria from the beginning of the year, continued its ravages during the last three months. On the 18th of November, the corps of the "train des equipages" at Algiers, had not fewer in their infirmary of Mustapha, than 30 mules affected with the disease; and eight more died during the course of the night. Besides these, there were several animals affected with farcy.

In 1840, this corps alone lost 1,800 out of 2,400 horses and mules together, almost all of them from the glanders. The loss during 1841, was even more considerable; amounting to not less than 2,000. Not a few of the horses and mules died from excessive fatigue and imperfect nourishment during the marches of the troops. The pressure of the saddle often caused abrasion of the skin, which sphacelated, and gave rise to most extensive denudation.

. . . . . The entire mortality in Algiers, during 1841, amounted to 1,944 deaths. Of these 931 occurred among the Musselmen, 221 among the

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* In a subsequent page will be found some useful remarks by M. *Combes*, (who had served for some time in Africa, on a peculiar form of cerebral attack, which is dependent upon the agency of agueish disease on the body.

Jews, and 792 among the Europeans: of the latter number, 402 were Frenchmen, and 216 died in the civil hospital.—*Gazette Medicale.*

ON LOCAL APPLICATIONS IN SOME CUTANEOUS DISEASES: THE OXYDE OF ZINC.

M. *Martin Solon* prefaces his observations on this subject with the following remarks, in the spirit of which we entirely agree.

"To advance therapeutic medicine, physicians of the present day should apply themselves rather to study the writings of their predecessors than to discover new remedies. We readily acknowledge that several most useful medicines have been introduced into the practice of our profession, of late years: but even in reference to them, we must admit that the merit of their discovery is due rather to the labours of the scientific chemist than to those of the practical physician.

"But whatever improvements may have been made since the time of our forefathers, we should not neglect many of the formulæ which they were in the habit of using. The old *theriaca* and *diascordium* are still well known and esteemed. My present purpose, however, is to direct the attention of my readers not to any of these complicated mixtures, but to a very simply composed remedy which has been long used with great benefit in many cutaneous affections, I allude to the ointment of the white oxyde of zinc."

Galen repeatedly alludes to it, under the name of *pompholix*, in his writings, as an excellent application in many wounds and ulcers. It was subsequently known by the strange names of *nihil album*, and *lana philosophica*. Subsequently, Gaubius recommended it highly under the appellation of *flowers of zinc*, as an internal remedy in cases of epilepsy; and Gmelin, in his admirable *Apparatus Medicaminum*, treats at considerable length of its great use as an outward application in a variety of cases.

M. *Solon* has employed it with great advantage in numerous cases of eczema, impetigo, ecthyma, and also of erysipelas, in all parts of the body: his formula is one part of the oxyde to ten parts of fresh lard. He very properly adds, that in no case should the physician ever trust to this or to any other topical remedy in the treatment of cutaneous diseases. Bleeding in some cases, evacuants in others, amylaceous baths and cooling drinks in all, are to be had recourse to at the same time.—*Bulletin de Therapeutique.*

Remarks.—The "unguentum zinci," so highly recommended by M. *Solon*, is certainly an excellent application in a variety of cases, and is in almost daily use in this country, however little it may be known among his countrymen. Often, however, it will be found that this and all other greasy applications disagree with cutaneous affections. A weak solution of the sulphate of zinc, or of the liquor plumbi—to which a portion of the diluted hydrocyanic acid may be most serviceably added—is then an excellent substitute: it should be applied tepid, and, if the part be covered with a piece of oil-skin to prevent the evaporation of the lotion, so much the better.—(*Rev.*)

GREAT UTILITY OF OPIUM IN CERTAIN CEREBRAL AFFECTIONS.

IN our last Number—Foreign Periscope—we gave a somewhat elaborate account of a series of papers, by M. *Forget*, on an epidemic of meningitis which occurred recently at Strasbourg. By referring to that article, our readers will perceive

that, from the very showing of the author himself, we are inclined to differ very materially from him in the general conclusions to be drawn from the whole report. We endeavoured to prove that the character or type, so to speak, of almost all febrile diseases, when they occur as epidemics, is very generally more or less modified from that exhibited by them in sporadic cases; and we at the same time hinted our opinion that the epidemic, of which M. *Forget* treats, should be regarded rather as a fever with marked cerebral symptoms, than as a genuine meningitis.

We are glad to find that we have been anticipated in these views by several of the writer's own countrymen; for, on looking over one of the recent Numbers of the Revue Medicale, we find some valuable observations on the epidemic in question by M. *Chauffard* of Avignon, where, as well as in several of the northern parts of Italy, the disease prevailed at the same time as at Strasbourg.

M. *Chaufford*, persuaded by a variety of circumstances—such as the simultaneous invasion of many persons in different localities, by the gravity of the symptoms and their intractable resistance to the ordinary methods of treatment, that the disease was not a simple meningitis, as supposed by M. *Forget*, but was really depending upon some specific, although unknown, cause—set himself with much assiduity to compare the results of different modes of treatment. The most powerful antiphlogistic and revulsive remedies were used in some cases; in others, emetics, purgatives, and contra-stimulants; and, in a third set, tonics and cordials were resorted to. Now all these methods, whether employed alone, or combined the one with the other, proved so unsatisfactory that the medical men often felt puzzled what to do. It was most melancholy to see young healthy patients sink, sometimes within forty-eight hours, as if they had been struck with a poisoned shaft, and every means, that were tried, utterly fail in arresting the fatal issue.

At this time, M. *Chauffard*, having accidentally administered a dose of opium for the relief of some particular symptoms in a young girl, who was very seriously affected with the epidemic, was surprised to find that, instead of lulling his patient to sleep, it had made her more wakeful, and had also diminished the retraction and the stiffness of the nape of the neck. On trying the remedy in other cases, he observed nearly similar results, and he found that in no case did it seem to increase the cerebral congestion, or to impair the energy of the vital energies. The following is the author's own statement:

"Whatever opinion we may form of its action, this one thing we know, that, when opium began to be regularly used in the treatment of that epidemic, the mortality certainly decreased, and the cures became more numerous in proportion as we became more bold in the administration of it. Every remedy failed without it; but with it almost every one seemed to succeed . . . . . At first we could scarcely believe that the patients could bear with impunity such large doses of opium, and we were afraid of its being the cause of serious mischief. As most young practitioners are usually much taken with any thing that is novel and bold, my house-surgeon took upon himself, on several occasions, to give from three to five grains of opium to the patients, immediately upon their admission into the hospital. I frankly confess that I was myself rather apprehensive at first of such doses; and yet we never had cause to regret this decisive treatment. . . . . The striking diminution in the mortality can not reasonably be ascribed to any natural abatement in the violence of the epidemic, if indeed there was any resemblance between the present one and that of the preceding season; for, in 1841, it made its first appearance in December, 1840, and it was in the January that I began to exhibit opium, at first with caution, and gradually with more and more boldness."

The concluding remark of M. *Chauffard* is too important to be omitted. He says: "During the 23 years that I have been the physician to a large hospital,

I have never seen any thing similar, nor any results in therapeutic medicine so much at variance with the ordinary principles of my practice:"—a most candid avowal, and therefore one that is the more valuable to be generally known.

It will be remembered that M. *Forget* admits that, after finding the ordinary methods of treatment prove most unsatisfactory, he derived unlooked-for success in many cases from the exhibition of opium—vide the last Number of the *Medico-Chirurgical Review*, p. 548. Perhaps it may be worth while to repeat a passage from his paper on the subject, as it will enable our readers to contrast his mode of treatment with that adopted by M. *Chauffard*. . . . . "After having combated, by the use of vigorous antiphlogistic remedies, the disease at its commencement, I observed that there was a tendency to certain nervous symptoms coming on, and I was induced to administer opium for their relief: in four cases out of seven, the troublesome phenomena vanished as if by enchantment. These results overthrow in some degree the classical ideas which I had held respecting the action of opium. It is so generally admitted—by the Broussaian school only,—that this medicine is not at all suitable in inflammatory diseases, more especially in those of the encephalon. . . . . We regret that this inspiration had not come to us sooner; as we should have been enabled to make numerous applications of it in practice; but the relations of cause and effect have been, in the present instance, so obvious that, although usually very sceptical of all innovations in therapeutics, we do not hesitate to publish our observations as the expression, if not of a discovery, at least of a very fortunate renovation."

Truly, not a discovery! M. *Forget*, like too many of his countrymen, seems not to be aware that it is an established maxim in practical medicine to administer opium for the relief of that erethism or nervous excitement, which not unfrequently occurs in inflammatory diseases, after bleeding and other debilitant remedies have been employed for some time. Certain it is that, if under such circumstances the use of antiphlogistics be still continued and the system be not soothed, we may generally anticipate a most tedious convalescence, if not indeed a fatal issue.

But let us not forget to point out the marked difference in the treatment adopted by M. *Chauffard* at Avignon, from that pursued by M. *Forget* at Strasbourg. The former gentleman, when he had once been made sensible of the virtues of opium in the treatment of the epidemic disease—to which by the bye he gives the name of *cerebro-spinitis*—administered it freely from the very commencement of its invasion, and in large doses—from 4 to 9 or 10 grains in the course of the four-and-twenty hours—continuing its use in some cases for several weeks. Quinine and other tonics were often exhibited with great advantage at the same time.

When we had written thus far, we found that a discussion had taken place in the Academy of Medicine on this epidemic meningitis, or cerebro-spinitis, as it occurred at Nancy. M. *Rollet*, a physician of that city, had addressed a long report of his observations, and M. *Ferrus* was appointed to report upon it. When this report was read, some of the leading members of the Academy, as MM. *Rochoux*, *Dubois*, *Roger-Collard*, *Bousquet*, &c. delivered their opinions on the subject. Most of these gentlemen expressed their decided dissent from the conclusion of M. *Rollet* that the disease was a genuine inflammatory affection of the nervous centres and their membranes: they regarded it rather as a malignant fever, with marked cerebral symptoms. The following remarks of M. *Roger-Collard* so entirely coincide with our own sentiments as expressed both in the former part of this article and in the last Number of this Journal, that we are tempted to extract them: they appear to have been received with very general approbation by the Academy.

"It is well known that the epidemic *genius* or constitution modifies in a very powerful manner of the type of most diseases, stamping upon their symptoms a

peculiar character, and often most decidedly affecting their degree of curability. If we recognise the truth of this principle, we shall at once perceive that, in the case under discussion at present, the malady was not a mere simple meningitis, but an epidemic disease *sui generis*, the seat and anatomical characters of which are only to be regarded as of accessory importance. We can thus readily understand how the physiognomy, so to speak, of the epidemic differed much in the different localities where it broke out; and why one mode of treatment may have succeeded in one place and not in another."

It is by attending to such considerations that the prudent physician will never allow his mind to be too much pre-occupied with any theoretical notions as to the seat or proximate cause of epidemic diseases, but will rather be guided by the symptoms of individual cases in the selection of the remedies that he employs. In one case, the loss of blood will be borne well and with advantage; in another, opium will be found to be by far the most valuable resource; and in a third, quinine will prove most useful. Few physicians however will, we should think, be inclined to resort to the remedy suggested and employed by M. *Rollet*, viz: applying a red-hot iron along the whole length of the vertebral column, from the nape of the neck to the loins, so as to produce an eschar *au troisieme degré*. These Frenchmen are certainly strange creatures!: they seem to regard their patients in nearly the same light as a teacher does the black-board in his school-room—to draw diagrams upon.

M. Forget's Letter to Dr. Cayol.

In the number of the Revue Medicale for last May, M. *Cayol*—who has been for many years one of the editors of that Journal, and has all his life been a zealous advocate of what has been termed the Hippocratic School in Medicine—published some remarks on the so-called epidemic meningitis of M. *Forget*, alluded to in the preceding article. M. *Cayol*, in that paper, did not hesitate to say that, in his opinion, M. *Forget* was quite mistaken in viewing the disease as a genuine inflammation; and he suggestad that it should be rather regarded as a grave fever, with marked cephalic symptoms. He considered that this view of the nature of the epidemic was much borne out by the results of the treatment with opium, which M. *Forget* himself admits proved so successful in numerous cases. It is with the view of exposing the fallacy of this opinion and of upholding his own doctrines, that the professor of Strasbourg has addressed an epistle to his 'tres honoré maitre' at Paris.

After alluding to the necroscopic appearances which, he thinks, so distinctly announce the pre-existence of decided inflammation, he then endeavours to point out the error of the Hippocratic maxim—so often quoted—'naturam morborum ostendunt curationes,' and to show how fallacious it is to draw conclusions as to the nature and seat of diseases from the character of the remedies that may seem to be most successful in their treatment.

For example, says he, every one knows that, on the first attack, and also towards the decline of many acute inflammations, the use of astringent, stimulant, and caustic medicines will often arrest and cure the disease. A cynanche may thus be often dissipated by the use of an alum gargle; an opthalmia by a wash of the nitrate of silver; and an attack of erysipelas by a blister. Again, is not a urethritis, a bronchitis, &c. in many cases, rapidly cured by the use of copaiba and other balsamic remedies? Then, too, how frequently will mercurial ointment cure erysipelas, peritonitis, pleuritis, &c.; and calomel—in the form either of powder, or of lotion, or of pommade—ophthalmia, vaginitis, and dermitis! The inference, that M. *Forget* draws from all these instances, is that one and the same morbid state, viz. inflammatory action, is curable by a variety of remedies

of very different character, and therefore that the Hippocratic saying, which we have quoted, is any thing but correct.

We need scarcely point out to our readers the fallacy of this reasoning. Inflammation is far from being an individual *entity* or simple specific condition, as M. *Forget* seems to believe. To fall back, as he does, upon the old definition of the disease—redness, swelling, heat and pain—and to argue upon this ground, merely shows the weakness of his cause. There is not a sensible practitioner in the wide world but knows that there is a marked difference between erysipelatous and phlegmonous inflammation, although he may find difficulty in explaining wherein the difference really lies; and to regard them as the same disease merely because they may have certain symptoms in common, is just about as wise—and we may add, as safe in practice—as to view delirium tremens and phrenitis to be absolutely identical.

If, then, inflammation be not one, but many diseases, need we wonder that the morbid state will yield to a variety of remedies, whose action is very different, the one from the other? Who is there that does not know that the phlegmasiæ of mucous membranes are, in many respects, essentially different from those of serous membranes? and that the one set of diseases seldom or never require such active depletory measures as the other? One of the great merits of *Bichat* was that of having first so lucidly pointed out and illustrated the diversified characters of inflammation, as it occurs in the various structures of the human body.

Many of the modern French school—and M. *Forget* is of the number—seem to have in a great measure overlooked the truly scientific researches of their distinguished countryman; else, surely, they would not carry their single idea of inflammation to such an extreme length as they do. The very multitude of nosological terms that end in *itis* (*ite* in French,) which we find in most recently published works on the Continent, is one among the many proofs of this extravagance. In place of cutaneous disease, we read of *dermitis*; for typhus fever, of *enterite*; for catarrh, *bronchite*; and so forth.

But it is unnecessary to enlarge upon this topic. The following is one of the concluding paragraphs of M. *Forget's* Letter: it is certainly not very lucid; but such as it is, he seems to view it as a refutation of the Hippocratic maxim, *Naturum*, &c. "In matters of science, as in the affairs of life, we cannot but perceive that, to judge by the event or issue, is the reasoning of weak minds, and that principles may exist quite independently of some results, which are seemingly exceptional and contradictory; for we are far from knowing the hidden link that binds certain causes to certain effects. From these considerations, I infer that certain therapeutic results can never overthrow our recognized doctrines on inflammation."

We confess that we must be contented to be ranked among those "pauvres d'esprit," whom the professor alludes to: results will always have a mighty weight with us in estimating the value of remedies.

M. FORGET'S STRICTURES ON THE FRENCH PHARMACOPŒIA.

The Strasbourg Professor has appropriately selected the following severe remarks of Bichat on the state of therapeutics in his day, as an epigraph to his own criticisms.

"An incoherent assemblage of opinions, incoherent in themselves, Materia Medica is, perhaps, of all the physiological sciences, that in which the vagaries of the human mind are best pourtrayed. What do I say? In truth, it is no science at all; but rather a crude collection of unsubstantiated opinions, of pu-

rile observations, of illusory remedies, and formulæ that are as strangely conceived, as they are capriciously brought together."—*Anat. Gener.* f. 46, 1801.

M. *Forget* very truly says, that a fertile source of the many absurdities, which are still to be found in Materia Medica, is the foolish practice of authors gathering into one heap the wheat and the tares, the true metal and the useless dross, all for the laudable purposes of displaying their erudition and swelling out their goodly tomes. These gentlemen, moreover, are usually better compilers than practical physicians, and on all occasions pride themselves upon being most exact and scrupulous historians. Without alluding to works of older date, M. *Forget* proceeds at once to criticise the French codex of 1837.

He alludes particularly to the great superfluity of its formulæ, and to the unnecessary farrago of substances which are ordered in the preparation of many of them.

For example, there is a *vulnerary tincture*, in the preparation of which no fewer than eighteen substances are introduced, and which after all as nearly resembles *Eau de Cologne*, as two drops of water do each other. By-the-bye too, there is a formula for making this well-known scent; but we much doubt whether the Codex will ever be able to rival the far-famed Jean Farina.

There is a *vinaigre des quatre voleurs* (how scientific) that contains 15 substances, among which there is the greater and the lesser absynthium, also strong and weak vinegar, as if the one was to give a sort of support to the other.

In the *baume tranquille*, we find six narcotic substances struggling against a dozen that are exciting; yet in spite of the inequality of numbers, carrying the victory; hence the name.

Another *baume*. that of *Fioravanti*, has maintained its ground, we are told, for upwards of three centuries: it is prepared with fifteen highly fragrant ingredients.

But the great polypharmic achievements are to be found in the class of electuaries; for there you find an *electuaire Catholicon*, which, to say the least of it, is scarcely orthodox; and the euphonious *diaphœnix*, in which sweet almonds are blended with ginger, and dates with black pepper and scammony!

We may pass over the far-famed *diascordium*, as it is eclipsed by the still more famous *theriaca* of Andromache, that truly pharmaceutical encyclopœdia. Oh! sublime arch-physician of Nero, how must thy shade rejoice to see the honours still paid to your immortal master-work by the legislators of French medicine in the 19th century! But even thy feats have been surpassed in the present day. *Celsus*, in describing the composition of the theriaca, enumerates only 36 substances; while our codex has doubled the number, short of one; and M. *Jourdan*, in his Universal Pharmacopœia published three years afterwards, has been so cruel as to reduce it to 66. *Pliny* himself alludes to it as a mere "ostentatio artis et portentosa scientiæ venditatio manifesta;" and *Cullen*, "le sage réformateur, et le grand philosophe en therapeutique," treats of it in these terms: "We have retained to the present day the theriaca of Andromache in our pharmacopœias—a very sure proof that the judgment makes very slow progress in matters of the materia medica. Even the College of London, which in their pharmacopœia of 1746 has shown so much discernment by diminishing the number of the formulas that are overcharged with ingredients, has nevertheless retained this theriaca without changing its composition. This was perhaps against the advice of some of the members; but the fact alone proves that the majority were still subservient to the influence of mere custom."

The learned authors of the French Codex of 1837 seem to have entertained similar opinions; for in the preface to that work we read: "it is more particularly in the compound medicines that we have expunged some of the superannuated formulæ which, by their bizarre composition, recal the infancy of

our art, and that remote period when they were first introduced into our pharmacopœias. We are not afraid that any one will blame us for these suppressions; . . . . . Perhaps we may be reproached for having pushed our scruples on this head somewhat too far."

If any one, says M. *Forget*, wishes to know the useless accumulation of idle matter that is often heaped together in works on Materia Medica, let him open the Universal Pharmacopœia of M. *Jourdan* at the article, Iron. He will there find no fewer than 420 formulæ, of which this metal forms the basis; of aloes there are 380, in which it is the chief ingredient. Perhaps this will be tolerated by some, in reference to really potent remedies; but what think you of 139 formulæ under the head of *Guimauve* or Marsh-mallow? Few people have even heard of the *gui de chene;* and yet we are supplied with 36 different prescriptions for its use.

Old *Murray*, in his Apparatus Medicaminum, alludes to the reproach of a redundancy of useless medicines in these words; "copia potius medicaminum quam inopia laborare pharmacopolia, vetus querela est, eaque merita;" and M. *Desbois*, in the preface to his Materia Medica, very justly remarks that, "there are false riches from which ignorance too often borrows its show and charlatanism its insolence, while the man of education feels at every step, in the midst of them, their worthlessness and his own poverty."

M. *Forget* tells us a fact (which by-the-bye we might have suspected) respecting the influence of the chemists and druggists in Paris on the number and variety of the formulæ in fashion. During the "triomphe passager" of poor *Broussais'* already-antiquated notions, the business of these gentlemen was at a stand-still; the leech-merchants only could thrive. "But the ardent re-action," says he; "which is fermenting in the present day, has shed a more benignant light on the shops of the apothecaries, and it would really be too bad to disturb this state of sweet beatitude. Besides, the chemist is one of the firmest supporters of the physician; it is he who brings him out, and pushes him on, with a zeal proportionate to the benefit he expects to himself."

This picture applies to more places in the world than Paris: the system of mutual benefit associations seems to be well understood everywhere.

Unfortunately the medical profession is not only a science; it is an art at the same time, a means of subsistence, in short a trade; and the great object of its members must be to gain a livelihood in the first instance,

> ——————— quærenda pecunia primum,
> *Gloria* post nummos ———————

M. *Forget* has quoted another passage of *Murray's* Apparatus on the subject of *experience* in medical practice, and we are so much pleased with it ourselves that we shall give it entire.

"One might suppose that experience was a very easy thing, to judge by the boasting of empirics, the number of their patients, and the quantity of their formulæ. . . . . Experience however supposes a very profound knowledge of disease, of its numerous degrees, and of every thing that can modify its character and course, such as the idiosyncracy of the patient, the epidemic constitution, the existence of complications, the condition of the atmosphere, the climate, the age, the sex, and so forth. It requires moreover a judicious application of medicines, as to the doses, their combination, their particular preparations, and the kind and quantity of the food that is to be taken at the same time. To fit any one for such a task as this, he must have the spirit of patient observation and of a calm unprejudiced judgment, to enable him to reflect upon the facts that are presented to his notice, to trace phenomena up to the causes that produce them, to rise from the known to the unknown, from the obvious to the obscure, from what is sensible to what is uncertain and concealed. Above all, his soul must be entirely

free from every prepossession and every bias that interferes with the love of simple truth. Are these the qualities that we meet with in the ordinary run of medical men, who sacrifice all to ambition and the love of money, and who not unwillingly become the slaves of a capricious public, whose only concern is to be amused, if they cannot be relieved?"—*Gazette Medicale de Strasbourg.*

ON DISGUISED INTERMITTENT DISEASES.

The subject of intermittent fevers, and of those other diseases which owe their origin to the same miasmatic cause, has of late years attracted no inconsiderable attention among the French journalists, in consequence of the fatal ravages which have taken place among their troops in Algiers. For two or three years after the occupation of that country, the mortality in the hospitals was frightful; and it was only after the bitter experience of not only the worthlessness, but of the danger, of the Broussaian doctrines and practice which had been learned in the schools, that the surgeons of the army at length found out the salutary effects of quinine and other antiperiodic remedies. We cannot now dwell upon this subject; our object at present being to direct attention not so much to the open and well-marked cases of intermittent and remittent fevers, as to those wherein other diseases, of a more continued character and which exhibit few or none of the symptoms of such fevers, are yet attributable to the influence of the same morbific cause and require the same mode of treatment. The first case we shall adduce is one of *cephalic*, and the second is one of *thoracic*, disease induced by the operation of miasms.

Case 1.—A robust artilleryman, 28 years of age, was brought one evening, about eight o'clock to the hospital of the Grand Mosque at Bona. He had been found on the high road in a state of complete insensibility, and no one could give any information about him. When I first saw him, says Dr. *Combes*, he was stretched out on his back in bed; all the muscles were in a state of tonic convulsion: the jaws were spasmodically closed; the eyes open and fixed (the pupils contracting partially on the application of strong light;) the pulse was 65, small and concentrated; the face was not however congested. I considered it to be a case of apoplexy, and was about to bleed the man, when yielding to the fears, which for some time past I had of depletion in the diseases of this country, I ordered the nurse to remain constantly at the bed-side of the patient, and communicate particulars to me without delay, if any change took place. Within two hours, I was told that he had moved himself in bed, and seemed to look about him for a moment or two; on addressing him, however, he gave no answer, and remained in a dull stupid state: his pulse at this time was only 52; and I observed too that the nails of his fingers were of a purplish colour. This symptom was sufficient for me; I immediately ordered him a mixture containing 60 grains of quinine, and, in spite of the rigid contraction of the jaws, he swallowed it almost all (we suppose in different doses;) a demi-lavement, containing the same quantity of quinine, was also given. On the following day, this man, whom I had thought to be at death's door, had recovered in a great measure the use of his senses, and was able to stammer a few words as well as a partial hemiplegia (both of feeling and movement) would allow him: this awkward symptom almost completely gave way to the use of the quinine internally, and of a stimulating embrocation for the lower extremities, in the course of six or seven days. He then left the hospital quite well.

Case 2.—Dr. *Combes* was the patient himself. Placed, says he, for a length of time in the midst of malignant fevers, I had for several months quite resisted

their hurtful influence. But one night, about an hour after I had been in bed, I awoke with a great difficulty of breathing, and a sense of constriction in the air-passages, accompanied with a most annoying tickling in the throat, and a most copious expectoration. These symptoms lasted for about an hour; and then I fell asleep. and was not again disturbed. On the following four nights, however, they returned about nearly the same hour, and in the same manner. On the fifth night, I was awoke by a sharp pain in my left side, accompanied with considerable dyspnœa. I got up, and lighted my candle, when, to my surprise, I found that my sputa were deeply tinged with blood. After the usual hour's wakefulness, I fell asleep and remained quite comfortable till next morning. I then began the use of frequently repeated doses of quinine; from that time I have had no return of my periodic night's disturber.

These two cases, observes Dr. C., are, in my judgment, instances of masked intermittent fever, and very satisfactorily prove that the lesions, so induced, are certainly not of an inflammatory character, but are to be combated by bark and such like remedies. This leads me to notice a remark made by Dr. Maillot, and other writers on the fevers of Algeria, viz. that, in proportion to the severity and frequency of intermittent fevers at any time, so is the tendency of their symptoms to assume a more or less decided continued character. It often requires no little experience and quick perception to detect the occurrence of the intermissions or remissions in such illnesses; and hence the danger there is of making a serious error in the diagnosis of the case. This is the more likely to happen, if there be any tendency to stupor and coma present; for then any abatements or exacerbations of the symptoms will scarcely be marked at all; and the attack will in all probability be considered one of sanguineous plethora.

It is not, however, to be denied that these local affections of one of the great cavities are not unfrequently altogether dependent upon an aguish cause, and are to be treated on the same principles as intermittent fevers: in other cases. they are to be considered as inflammatory or congestive complications of the febrile attack, and will require topical or even general depletion. Let not the physician, however, dream of treating these local complications as if they were primary and idiopathic. This was the cause of the frightful mortality among the sick in Algeria, for the first two or three years after our occupation of that country. The surgeons thought that they had to treat *gastro-cephalitis*, and resorted to the use of antiphlogistic remedies, whereas all the while the disease demanded the exhibition of bark and other tonics: ultimately, the mortality diminished in a very remarkable degree—from 14 or 15 down to 5 per cent. of the entire number affected. It has been chiefly to the skill and sagacity of M. *Maillot* that we are indebted for this most important discovery.—*Gazette Medicale.*

Dr. *Simon* in a late No. of the Journal des Connois. Med. Chirurg., has related three cases of well-marked intermittent asthma, in each of which a rapid cure was effected by the administration of quinine. In commenting on these cases, the writer very justly observes, that the exceeding attention, which in the present day is paid to the diagnosis of the purely physical phenomena in all diseases of the chest, has led the minds of many physicians away from duly appreciating the influences of miasmatic agency in certain cases of asthma.

Alluding to the pathological doctrines of the old physicians, he remarks:—"Certain changes in the anatomical conditions of the structure of the lungs and the heart had escaped them, it is true, and they were consequently ignorant of some important scientific data; but, from their very ignorance on these subjects, their attention was the more occupied with the more important matters of practice and treatment. Struck with the inconstancy of the symptoms, which usually attend the course of periodic asthma, and with the marked remissions which these phenomena often present, they sought for the cause in their regular

play of the various functions of the system. By following out this plan, they arrived at more comprehensive views of the pathogeny of the disease than the physicians of the present day have done, more especially in regard to the influence of remedies upon it. If we candidly examine the principal species or varieties of the disease, which they have admitted into their nosological catalogues, we shall probably be obliged to admit that most, if not all, of them really exist in Nature, and that every-day experience confirms the truth of those therapeutic indications on which they rest. The nervous, the sanguineous, the metastatic, the abdominal, and the atonic varieties of asthma are not the mere phantoms of a crude theory, but are in truth so many forms of paroxysmal dyspnœa, which are met with in actual experience. In some of these varieties, the means of investigation, which we at present possess, are certainly more complete, and enable us to detect certain local lesions of structure better than they could do. But let it be remembered that, even when we have discovered such lesions, this will not explain the intermittent character of the symptoms; while the more comprehensive views of pathogeny, held by our ancestors, are more easily reconciled with this peculiarity, and moreover lead more directly to real therapeutic indications. It would not be difficult to demonstrate by facts our opinion of the practical superiority of the views entertained by the older physicians over those of our purely anatomical pathologists.—*Journal des Connaissances.*

Remarks.—It is very obvious, from the tone that pervades a good many of the continental journals at present, that a silent but very marked change is at work in medical doctrine throughout France, and will ere long entirely overthrow many of the most established ideas of the schools in that country. There is a growing tendency to return to the plan of investigating diseases that was pursued by the physicians of the last and of the preceding centuries—viz: to endeavour to ascertain their exciting and predisposing causes; to mark the development and progress of the symptoms; to note the state of the weather, the constitution of the patient, and so forth; to watch the operation of different remedies; and to study the changes that are going on in the blood and other fluids of the body.

Within the compass of the last two or three pages, our readers may observe three very significant illustrations of what we have just said. The fevers of Algeria are now universally admitted *not* to be *gastro-enterites*; M. *Simon* shows that modern pathology, as it is usually taught, will not account for much in the history of asthma; and M. *Forget*, (a most decided Broussaist, be it remembered,) acknowledges the salutary effects that may be derived from opium in the treatment of what he calls epidemic meningitis, and has began to quote *Murray*, *Cullen*, and other of the older writers, in his lectures. His recent letter, too, to M. *Cayol*, and his former one to the late lamented M. *Double*—one of whose last acts was to testify to the pleasure and instruction which he derived from the perusal of the works of Hippocrates and Galen—show, at any rate, that he is very sensible at what a discount the physiological doctrines are in the eyes of some of his most distinguished countrymen.

The researches, too, of M. *Andral* on the condition of the blood in various classes of diseases, cannot fail to draw the attention of many French practitioners to a field of pathological inquiry, that has been most unaccountably neglected since the beginning of the present century.

We might quote also the labours of the celebrated German, *Liebig*—whose work on Organic Chemistry was so copiously reviewed in the last number of this Journal—as tending to bring back a modified system of humoral pathology: his admirable researches on the interesting subject of fermentation are well calculated to throw much light on the development and ætiology of many malignant febrile diseases.—(*Rev.*)

M. VELPEAU'S WORK ON SQUINTING.

The indefatigable surgeon of La Charité has recently published a long—of 180 pages—Memoir on this exhausted subject, as a Supplement to his "New Elements of Operative Medicine."

Like most of his writings, it is most unnecessarily prolix; and hence, even had the theme been less worn out than that of *Strabisme* has been during the last two years, we should not have been tempted to do much more than skim the surface. It is an egregious error, that into which so many of the French authors fall—we mean the practice of narrating briefly, or in detail, every case that they can scrape together. For example, in this memoir, M. *Velpeau* quotes the reports of no fewer than 121 cases, which had occurred in his experience, giving us the names, ages, residences, and occupations of all the patients. This is, perhaps, not quite so bad as the custom of many German authors, who are not contented to tell us all they know about their patients from the time of their birth, but will often enter into particulars as to the health of their fathers and mothers. This plan is certainly an admirable *recipe* for making a book; any one might thus very easily beat Sir *W. Scott* or *Calderon* in the number of their writings, if they will but try.

M. *Velpeau* informs us, in his preface, that at first he had intended to embrace the subject of stammering and the surgical operations that have been recently proposed for its cure, along with that of squinting; but that, on second thoughts, he found that "the question was really not worth the trouble of giving it a place in a didactic work." He certainly is not far mistaken when he gives it as his opinion, that the operations for the cure of stammering "will not remain in practice:" it is a disgrace to our profession that some of them were ever attempted. And even in respect of the operation for squinting, although we are not at all willing to discountenance it on every occasion, we are very far from agreeing with our author that it is one "of which the nineteenth century may be justly proud." M. *Velpeau*, however, is far from being an indiscriminate admirer of the operation, and he candidly admits that not only great indiscretion, but positive and very wilful falsehood, has been displayed by some of its advocates, in regard to the marvellous success that attended its performance in their hands. He quotes the thesis of M. *Melchior* of Copenhagen, (De Myotomiâ Oculi,) and also the *Medico-Chirurgical Review*, as having exposed the scarcely-honest practices of certain writers.

There is now little doubt that, in a very considerable proportion of the cases operated upon, the deformity returned in the course of a few weeks afterwards; we read that in Belgium, "the number of failures was so great that it quite discouraged the surgeons themselves." But, without multiplying similar instances, let us hear what M. *Phillips* (of Liege, we believe,) has openly published reepecting the credit that is to be given to some reports, and we ask whether it is not a disgrace to the profession that any member of it should expose himself to such degrading imputations as are here set forth. What is the public to think of the honesty of medical evidence, after such charges brought against any one who holds a respectable position in society?

"During the last few months we have heard so much of the numerous and brilliant success that has attended the practice of *two great surgeons*, who tell us that they never meet with any reverses, that we have repeatedly asked ourselves if these gentlemen have an operation that is quite different from that which we have been in the habit of performing; but it is only when we have been informed of the real results of their practice, that we have learned how to appreciate the value of their assertions. As their *announcements* greatly exceeded the reality of the facts, and as the *advertisement* was certainly much more attractive than the *spectacle*, it has been necessary to find out the cause of such *false-*

hoods. They have perhaps, been the forced consequences of wounded vanity, on discovering that they could not venture quite so far with the surgeons of Paris, as they had been able to do with impunity with their assistants and pupils. . . . . .We thus see, that no importance can be attached to what M. B——— has published respecting his *constant successes.* I have detailed several cases, which utterly falsify his statements, and I am quite satisfied that it would be very easy, if it was worth the trouble, to make out a series of primary failures, and of consecutive accidents."

M. *Velpeau* is almost as severe on the conduct of some of his countrymen:—"Forced," says he, "to examine for myself the facts published by some surgeons, and to ascertain what they considered to be cures, I can safely affirm that I have seen several of the *operés* acquire a squint outwards, after having lost their squint inwards; not a few retain their squint after a second operation: and others affected with exophthalmia, excessive denudation of the eyeball, or some other most unpleasant deformity. I may add, that these accidents have been much the most frequent among the patients of those surgeons who have most abused publicity, especially that of political newspapers."

One effect of such dishonest practices has been to throw a general discredit on the operation altogether. "After having," says our author, "enjoyed an almost unheard-of reputation, it has become, in Paris as elsewhere, the object of very marked distrust." Little is the wonder; the public find that they have been grossly imposed upon; and hence it is that not a few who squint, and whose cases might be remedied by an operation, prefer to retain their deformity than run the risk of another that may be worse. There was one circumstance that alone made *us* strongly suspect, from a very early period of its history, that the advantages of the operation for the cure of squinting were greatly exaggerated by all its zealous advocates: it was this: every writer seemed to recommend an operation of his own; no one surgeon seemed to adopt entirely that of another. On looking over M. *Velpeau's* memoir we find that he gives an account of about *twenty* different methods of operating:—is this the case with any genuinely-established operation in surgery?

It is no easy thing to determine with accuracy the *real* and *ultimate* success of the operation on a large scale. According to M. *Velpeau's* experience, out of 300 cases, in one half it proved successful; but he candidly admits, at the same time, that it will not be possible to arrive at any exact conclusions on this question for several years, when the operation has been fairly tested by conscientious surgeons and with due precautions.

It is important to know that almost all squinting persons see badly with the affected eye. In some, the squint is complicated with a confusion of vision or a certain degree of amaurosis; while others are more or less short-sighted or see objects double. In a few, the eyes are in a state of almost constant movement, and hence are liable to become soon fatigued. From what M. *Velpeau* has observed, it would seem, that not more than a fourth part of squinting people can see as far and as distinctly with the deformed, as with the straight, eye. Some have suspected that the imperfection of the vision may be the cause, rather than the effect, of the deviation of its axis; but facts seem to prove the contrary: and we have no good reason for supposing that mere weakness of sight ever brings on squinting.

M. TESSIER ON PURULENT INFECTION OF THE SYSTEM.

It appears that four or five years ago, M. *Tessier* read a paper before the Academy of Medicine, in which he endeavoured to prove that most, if not all, the cases of that most fatal disease, which has been known by the appellation of *purulent*

[redacted]n, are not, as is usually supposed, dependent upon the inflammation and suppuration of some particular blood vessels, and the subsequent mechanical introduction of the pus into, and its admixture with, the general circulation; but are rather to be regarded as the results of a primary and idiopathic contamination of the blood, such as occurs in many malignant fevers—the phlebitis being viewed by him as the effect, and not as the cause, of the systemic disturbance.

M. *Blandin*, whose attention has been for many years directed to this interesting subject of pathological research, was appointed to report on M. *Tessier's* memoir. The report was unfavourable to the views of the writer. M. *Blandin* professing his decided belief in the other view of the question—that which was proposed by *John Hunter*, and has been adopted by *Dance*, *Velpeau*, *Cruveilhier*, and many other well-known authors.

A case having recently occurred in the Hôtel Dieu, under M. *Blandin's* care, the circumstances of which appeared to M. *Tessier* strongly to confirm the truth of his opinions, and to be at variance with the pathological doctrines usually taught, he has again brought the question before the public, and has addressed a long letter to his old master, couched in such terms as to educe a reply from him. The plan of carrying on scientific controversy in the epistolary form has many advantages, and the French, on this, as on most other occasions, have set a good example. Our readers will remember the letters of the late M. *Double* and of M. *Dubois* on the comparative value of the writings of Hippocrates and Galen, and of M. *Andral* and M. *Forget*, on the state of the blood in fevers.

M. *Tessier's* letter, or rather memoir, being of great length, we are necessarily obliged to curtail it very much: its pith and substance are however, we think, contained in the following summary. It commences with some general observations on the point at issue,* and an allusion to the author's former papers; but we shall at once proceed to the report of the case, which forms the immediate theme of the discussion between him and M. *Blandin*.

Case. A man, 29 years of age, was admitted into the Hôtel Dieu, under the care of M. *Blandin*, for what appeared to be white-swelling of the knee-joint. The health of the patient in early life had been good; but for the last six or seven years, it had been far otherwise, in consequence of his occupation, that of a weaver, and his residence in a damp low neighbourhood. At the upper part of the joint, there was a fistulous opening, through which a probe might be introduced for several inches towards the head of the tibia, which was found to be bare and rough. As the other symptoms seemed to indicate that the joint itself was not implicated, (this diagnosis proved afterwards to be quite erroneous) it was resolved to make a trial to save the limb. With this view, the fistula was laid open, and the diseased surface of the bone was cauterised with a heated iron; the object being to convert the caries into a necrosis. Unfortunately, a violent inflammation of the joint supervened: and, what rendered the prognosis

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* M. *Tessier* is of opinion, that the high mortality in the Paris hospitals after grave operations is, in a great measure, attributable to the erroneous notions which are held on the subject of purulent infection. "Yet," says he, "it would be most unjust to accuse our surgeons of wilful indifference or cruelty because the theory which they have adopted on the question, directly and logically leads to the conclusion, that the operation is unquestionably the cause of the patient's death. Although well aware of the extreme peril of great operations in our hospitals, it seems always to be expected that each case will be more fortunate than that which preceded it, that the union of the wound will take place by the first intention, that the ligatures will not include any vein, and that any consecutive inflammation will be at once detected and subdued." It will be afterwards seen that he attributes the disease generally to the influence of hospital *malaria*.

more unfavourable, it was now found that, on moving the joint, a sen[illegible]
felt as if two rough surfaces rubbed against each other—a symptom wh[illegible]
ered it more than probable that there was a serious disease of the articular
ces. The circumstance, too, of the patient having had several attacks of
ring made M. *Blandin* the more anxious not to delay the amputation of the
any longer.

is was done on the 9th of April. On examining the joint, all its tissues were
to be deeply diseased; there was purulent matter within the capsular
ent, and the disease was of that kind of white-swelling which has been
the tubercular, and which commences in the osseous texture. On the
ng of this day, there was a shivering fit followed by heat and sweating.
day, the patient was exceedingly low; his features were shrunk, and the
e of the body covered with a viscid perspiration. M. *Blandin* suspected the
on of phlebitis and of consecutive purulent infection. Two days subse-
ly, the patient complained of a pain in the right shoulder: the stump was
uppurating freely—a good sign; for usually when phlebitis supervenes. the
ration decidedly diminishes, and a colliquative diarrhœa not unfrequently
on. The shiverings, followed by profuse sweatings, were more frequent
ver.

ording to the views of M. *Blandin*—that phlebitis is the cause of purulent
on—the object in such a case as the present is to arrest the progress of the
ar inflammation, in order that the formation of fresh pus may be prevented,
at the system may be enabled, if it has the power, to eliminate the purulent
that has already become mixed with the circulation. He is of opinion, that
ork of throwing off the peccant humour is effected chiefly by the skin and
dneys: both the perspiration and the urine having, in these cases, a peculi-
useous, and pus-like, smell.

e surgeons have recommended, under such circumstances, to expose the
bove the seat of the inflammation and divide it, with the view of prevent-
e mischief spreading: "We," says M. *Blandin*, "consider this proposal
ry rational one, and have performed it once ourselves, although without
s."

adds, that he has tried almost every internal remedy that could be thought
the cure of suspected purulent infection, but rarely with any advantage.
ing that Nature makes use of the skin as the chief emunctory to relieve
when pus has been introduced into the system, he has had recourse to all
of diaphoretics, as nitre, ammonia, sarsaparilla, squills, quinine, &c.; but in
every case unsuccessfully. In one or two instances, the exhibition of Eau
e (a very powerful sudorific,) has appeared to be of use. In the present
e ordered large quantities of mercurial ointment to be rubbed in on the thigh
oin, (after a number of leeches had been applied along the course of the
l vein,) in the hope of inducing salivation, which, he thought, could not fail
seful. But the patient gradually became worse, and died on the 13th day
he operation.

ection.—Numerous metastatic abscesses were found dispersed through the
ace of the lungs; some of them made a projection on the pleural surface.
were most numerous towards the basis and back part of the lobes. Some
still hard and surrounded with a red inflammatory circumference; while
were in a softened state, and were genuine collections of purulent mat-
The femoral artery, from the surface of the stump up to the groin, had
ietes considerably thickened, but there was no pus found in its canal; a
coagulum plugged up its divided extremity. The femoral vein was much
cted in its calibre; its walls were much thicker than in health; and,
ng it open, a fibrinous clot, or what appeared to be rather a mass of con-
pus, was found at the point where the saphæna vein joins it. The
ong of this clot to the inner surface of the vein, all round, were so

solid as to prevent the pus, which filled the canal of the vessel lower down, from passing into the current of the circulation. A minute quantity of purulent matter was found in the deep-seated femoral veins. the iliac vein was healthy.

The appellation of metastatic abscesses, applied to those circumscribed purulent deposits observed in the lungs, liver, &c. in such cases as the present, is certainly not very appropriate; it expresses one of those ideas of the old humoral pathology, which cannot well be recognised in the present day: the term of suppurating lobular pneumonia would be much more rational. There was a time when I believed that they were nothing but the rapid conversion of already-existing tubercles into abscesses or vomicæ; the idea was the prevailing one in the schools at that time, and we at once adopted it with ardour. But we (M. *Blandin*) have been forced to modify our opinions on this subject, as we can no longer admit that, in most cases of purulent infection, is there any antecedent lesion of structure in the internal viscera. The explanation of the development of these abscesses still remains a problem in pathology. Perhaps the most reasonable hypothesis is that suggested by some writers of the present day, viz. that the globules of pus, being more voluminous than those of the blood, are arrested in the minute capillaries, and thus occasion a local inflammation, which speedily runs into the suppurative process.

"To sum up our opinions on this case, we should say," (observes M. *Blandin*,) "that there had been at first a phlebitis of the femoral vein, followed by purulent infection; then a moment of arrest produced, probably, by the treatment that was adopted; and, lastly, a return of the symptoms, and the advance of the disease to a fatal issue. The question presents itself, would it have been possible to stop its progress by more early adopting therapeutic means? It is a subject which we have attentively considered, and one, the study of which will induce us to act more promptly on the next occasion. We shall have recourse to the application of leeches and afterwards of warm poultices along the course of the femoral vein, from the very first manifestation of any unpleasant symptom after the operation"

M. *Tessier* proceeds to criticise the opinions of M. *Blandin*, in reference to the preceding case, and attempts to show, from the very statements of the report itself, that there was a purulent infection (or, as he terms it, purulent diathesis,) of the system before the amputation was performed. He grounds his belief on the acknowledged circumstances that the knee-joint was found to contain pus, and that there had been several attacks of shivering immediately before, as well as after, the operation. He asks M. *Blandin* what is the exact meaning of that expression "that the symptoms indicated *un état general de l'organisme*, which would probably be increased by the disease of the joint;" (M. *Bandin* is reported to have made use of the expression in his clinical lecture on the case) and gives it as his opinion that it can allude to nothing else, except that very state which is known by the appellation of purulent infection.

While he does not deny that the femoral vein was found, on dissection, to exhibit most distinct traces of inflammation, he suggests that this circumstance does not prove that the phlebitis was the cause of the constitutional disease. According to his opinion, phlebitis is frequently symptomatic of, and induced by, purulent infection of the system. When the disease is primary and idiopathic, its course varies much in different cases: in some, it passes on to suppuration, yet without a single dangerous symptom making its appearance; while, in others, it proves rapidly fatal, with or without the usual train of symptoms which indicate a purulent infection of the system Some pathologists have supposed that this difference in the course and issue of the disease depended on the circumstance of a coagulum being, or being not, formed within the vein, between the part inflamed and the general current of the circulation. M. *Tessier*, however, denies the accuracy of the alleged fact, and attributes the difference in

esults entirely to the difference in the vital power of the economy. He , with much show of reasoning, is intra-venous suppuration the only lesion is ever followed by purulent infection of the system? and is not suppurating itis, especially after penetrating wound of a joint, quite as frequent a cause? ıe case of M. *Blandin* is regarded by him as affording a good instance of he deems phlebitis symptomatic of, and induced by, an antecedent purulent tion: and he views the suppurating inflammation of the vein in the same as those purulent deposits in various internal viscera, which have been d *metastatic*, but might be much more appropriately termed *symptomatic* sses.

ıe following is his interpretation of the phenomena of the case under conside- n:—

Before the operation, there was a manifest predisposition to the purulent iesis,* if indeed this morbid state had not already taken place.

Immediately after its performance, the purulent diathesis was fully de- ped.

A gradual aggravation of all the symptoms, with the remissions usually rved in the progress of the purulent diathesis; subsequently death.

On dissection, internal suppuration,—in the femoral vein, in the pleuræ, and e substance of the lungs—symptomatic of the purulent diathesis.

e then proceeds to combat the statements, that have been made by many rs, in favour of the doctrine that the pus is introduced into the general cir- ion directly from the inflamed vein, and that it is from this mechanical ad- ıre that all the dangerous symptoms of purulent infection proceed. He s several passages from the works of *Hunter*, *Dance*, and *Cruveilhier*, to out the inconsistencies which, he thinks, these gentlemen have fallen into, in quence of their allowing their minds to be so entirely occupied with the hat all the constitutional symptoms are attributable to the local disease of eins.

The mechanical physician," says he, "has taught that the introduction of ent matter into the circulation is the cause of those changes in the blood, ı usually take place in cases of the purulent diathesis. On the contrary, I shown that these changes represent the phases of the purulent transforma- of the vital fluid, under the influence of the fatal diathesis."

hatever view be taken of M. *Tessier's* opinions on this interesting pathological ct, there are few who will not agree with him as to the value of the remedial estion, with which he closes his memoir.

The great object of our discussion is to endeavour to find out some means event or cure the accidents which cause so great a mortality among the cal patients in our hospitals. Whatever be the name that he give to these ents, it will be acknowledged by all that they are much more frequent, and ı more fatal, when many patients are crowded together than when they are apart. Let us therefore all join in our exertions to obtain for every hospital ies of isolated apartments for the reception of many of the surgical cases. his simple expedient we should be doing an eminent service to the patients, withdrawing a serious obstacle to the success of the surgeons."†—*Gazette ical.*

All that M. *Tessier* wishes to imply by this phrase, is a tendency in the sys- to the formation of purulent matter. He thinks it preferable to that of puru- *infection*, as this term may signify either the contamination of the system by absorption of pus, or the morbid condition which gives rise to the formation us.

In the commencement of his paper, M. *Tessier* had already alluded to the

M. BLANDIN'S LETTER IN REPLY TO M. TESSIER.

Before making any comments of our own on the facts and reasonings contained in the preceding paper, we shall extract the most important parts from the Letter which M. *Blandin* has addressed to M. *Tessier*, in answer to the objections that the latter has made against both his theory and his practice.

He first alludes to the designation of the disease in question.

"Purulent infection," says he, "exists only when the blood, mixed in the blood-vessels, I do not say with the elements of, but with already-formed, pus, is conveyed by these vessels to every part of the body, and is thus distributed over all its organs: such is the morbid state which some writers persist in, most injudiciously, called *purulent resorption*. It would be easy to show how much more appropriate is the appellation of *purulent infection* (which I first bestowed upon it) than either this one, or that of *purulent diathesis*, which you, my dear confrere, seem to fancy, and which, properly speaking, is applicable rather to the circumstances which favour the development of the disease, than to the disease itself. We speak of purulent infection, as we have long been accustomed to speak of miasmatic infection, to express the fact of an actual poisoning of the fluids of the body with pus in the one case, and with noxious miasms in the other.

"According to our view of the disease in question, purulent infection is always the result of inflammation of the blood-vessels, usually of the veins, terminating in suppuration; but as it is only developed in consequence of the transportation of purulent matter by the sanguineous currents in the neighbourhood of the spot where it is formed, and as this transportation is not always possible, it follows that the vascular inflammation is to be regarded only as a predisposition to the development of the disease. Once however developed, purulent infection gives rise in its turn to other morbid phenomena, the most remarkable of which are those abscesses which have been denominated *metastatic*, but whose mode of formation does not, in our opinion, justify this appellation. . . . . .

"Thus after wounds or operations there may take place—and unfortunately the occurrence is not rare—three different morbid states: 1, phlebitis—2, purulent infection—3, and the formation of metastatic abscesses; morbid states subordinated the one to the other, in such a manner that the first is the cause whence the other two more or less immediately proceed, and the distinction of which it is the more important to attend to, as their succession, although of very frequent occurrence, is however neither constant nor necessary. . . . . .

"Such are the general data which serve as a *point de depart* for any future discussion, and to which all our reasonings and theories must have reference. Unless by denying the fact of the admixture of actual pus with the blood at a certain period of the disease at which our patients often sink after operations. I do not suppose that you and I shall differ much in our views thus far; it is in the interpretation of these data that our main difference in opinion exists.

"If I rightly understand your views, the phlebitis, the alteration of the blood by the pus, and the formation of metastatic abscesses, are regarded as the consequences of a peculiar disposition or diathesis of the affected patients, pre-existent to those alterations, and which, once developed, becomes the cause of the purulent secretion of the vessels, viscera, cellular tissue, &c., and is outwardly manifested by certain peculiar characteristic symptoms.

"Our view of the case is different: we consider that at first the disease is en-

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great importance of *isolating the patients* in hospitals—a fact, says he, proved on a great scale at the Maternité, and amply verified by the long experience of M. *Sanson*, and M. *Marjolin*, as well as by the recent researches of M. *Malgaigne*.

tirely local; that the inflammation passes from the surface of the wound to the interior of the adjacent blood-vessels; that pus is formed in these vessels; that it is carried along by the sanguineous currents in the neighbourhood; that it becomes mechanically blended with the blood and is distributed over the entire system, which thereby becomes infected or vitiated. The formation of abscesses at a distance may be regarded as 'le contre-coup' of the infection which has already taken place. . . . . .

"These points being now arranged between us, let us consider the case from my clinical lectures, to which you have more particularly directed your criticism, and which you adduce as a striking illustration in favour of your own views, and in disproof of my opinions. The particulars are as follow: The patient had a white-swelling of the knee-joint. Two days before the operation, the joint had been affected with acute inflammation, and, as this was attended with violent shiverings, I began to have serious apprehensions that I might not catch a favourable moment to try the last resource for my unfortunate patient. The inflammatory symptoms however abated, and the amputation was immediately performed. The shiverings returned in the course of the evening; and a few days afterwards the purulent infection of the system was complete. At the same time, pain was felt in the groin and along the course of the femoral vein: leeches were applied, and the parts were afterwards smeared with mercurial ointment.

"On dissection, the femoral vein was found to be much contracted and thickened from its divided end on the surface of the stump to where the internal saphæna vein joins it: higher than this point it was quite normal. Purulent matter was found in two points of the vein; viz. just within its divided extremity on the face of the stump, and again a little below the junction of the saphæna: a fibrinous clot separated these two deposits. There was a second clot, infiltrated with pus, and forming a barrier between the pus and the sanguineous current, which during life passed from the internal saphæna vein towards the femoral. Several metastatic abscesses were found in the lungs.

"This case certainly seems, at first sight, to favour your doctrine, my dear *confrere;* as it might naturally be supposed that the plug, formed by the coagulum below the opening of the saphæna vein, completely prevented any pus passing from the lower part of the femoral vein into the current of the circulation. But let it be remembered that this plug was itself infiltrated with purulent matter, and therefore that there was nothing to prevent the transmission of the fluid by the sanguineous current in the saphæna into the general circulation. Moreover, it is highly probable that the formation of the plug took place only towards the close of the case, and after purulent matter had already entered into the general circulation. The antiphlogistic remedies, that were used, might have tended to favour the deposition of the coagulum.

"You remark, my dear sir, that, at the time when the amputation was performed, the condition of my patient was such as to *fix our attention*, seeing that I deemed it so unsafe to delay the operation; and you add these words, 'I leave it to M. *Blandin* to define what this condition really was, for fear that I may not quite understand it. It is quite true that my patient had an attack of violent shivering on the day of the operation—an event which is certainly of rare occurrence in ordinary circumstances; but let it be remembered, at the same time, that there had been similar shiverings before its performance, (shiverings which had occurred during the recrudescence of the inflammation of the joint,) so that the attack, which took place on the evening of the operation, was in truth only the sequence of those which had preceded it, and it unfortunately attested that the disease, of which it was the expression, had not been removed by the amputation, as we had hoped that it might be. (This is surely a most unsatisfactory explanation.—*Rev.*)

"Now the question comes for our consideration, what was this disease that the operation failed in removing? According to your views, the explanation is easy.

You answer that it was the general disposition of the system, (what you call a *purulent diathesis*;) whereas, in my opinion, it was a phlebitis of the upper part of the femoral vein, when the amputation was performed—a phlebitis that was yet incipient, and the symptoms of which were not sufficiently manifest to be readily detected, but which were afterwards abundantly obvious.

"Although the dissection does not certainly prove that there was an inflammation of the femoral vein previous to the operation, it at least shows that this lesion was not imaginary; while it has disclosed nothing in favour of your idea of a purulent diathesis. All the circumstances of the case may be readily explained without having any recourse to this theory. According to my view, there was an incipient femoral phlebitis before the operation; a more complete development of the disease immediately after it; subsequently a purulent infection of the system, with the remissions usually observed to attend the disease; and lastly, on dissection, it was found that there was pus in the vein, that the blood was more or less altered, and that metastatic abscesses existed in the lungs." * * *

"You must permit me, my dear sir, to differ entirely from you with respect to the results of MM. *Dance* and *Cruveilhier's* researches. According to my views (and contrary to your assertions) those two gentlemen are altogether correct, and have done nothing more than merely interpret the facts which they observed.

"As to the question, whether the formation of the clot is primary or secondary in phlebitis, I am unwilling at present to discuss it; as it would require much more time than I can at present afford to do it justice. I must leave you to style, (if you continue to deem it right,) as mere hypotheses, the numerous and well-authenticated facts narrated by *Hunter*, *Dance*, myself, and a host of other writers, in which the purulent matter has been found *free* in the veins. I should however certainly advise you to be less severe in your comments on the writings of the late much-regretted M. *Dance*; for it may be that they are much more accurate than may seem to you, and that the *respectable shade* (to use your own phrase) of this accomplished physician would not have had much cause to dread your indiscreet attacks."—*Gazette Medicale.*

Remarks.—After attentively examining the letters of M. *Tessier* and M. *Blandin*, it seems to us more than probable that the truth on the question under discussion lies in the mean between the opinions held by these gentlemen. To deny that, in any case of traumatic phlebitis, the formation of pus in the vessel ever precedes the constitutional disturbance, is, we think, unquestionably wrong. So far, in our opinion, M. *Tessier* carries his opposition to the generally-received doctrines to an unwise extreme; but we cannot, at the same time, conceal our strong belief, that not a few of the cases of the so-called purulent infection are in truth examples of a primary vitiation of the fluids, and that the co-existent inflammation and suppuration of the veins in certain parts of the body are to be regarded as secondary phenomena. This vitiation of the blood may be induced either rapidly by the introduction into the system of some poisonous matter, fluid or aerial, (as in the case of dissection-wounds, and puerperal fever,) or more slowly by the long-continuance of some cachectic disorder.

In M. *Blandin's* case, we think it cannot well be doubted by any one that the operation was undertaken under most unfavourable circumstances—circumstances, be it remembered, brought on by the cruel and most unscientific treatment which had been resorted to. That any hospital-surgeon of the present day should, in such a case as the above, have ever dreamed of laying a fistula open and cauterising a carious bone with the red-hot iron, in the immediate vicinity of a diseased joint, may surprise many of our readers. But, alas! this is only one out of many other instances, which we could adduce, of the woful disregard of consequences which characterises much of French practice. The tables, which we have given in the present and last numbers, of the mortality

after the great operations in the Paris hospitals, abundantly show that we are not making a random charge. It has been said that a great poet must be a good man; how far this holds true of the sons of song, we shall not presume to decide; but we have little hesitation in asserting, that the other members of Apollo's family, if they hope to arrive at real eminence, must learn the important lesson that Hudibras inculcates,

"To other people not to do
What themselves would not submit to." *Rev.*

THE ACCIDENT ON THE VERSAILLES RAILROAD.

A good many of the unfortunate sufferers were conveyed to the Necker hospital, under the care of M. *Berard*. The injuries, as might be imagined, were of very different kinds and degrees in different cases:—

1. Fractures in those who had been precipitated with force upon the ground from the tops of the carriages.

2. Effects of commotion produced by the sudden stopping of the train, which was going with great speed at the time. In several persons, there was a most urgent and painful desire to pass their urine: this phenomenon was very remarkable in the case of a woman, who entreated M. *Berard* to pass the catheter; but there was scarcely a drop of urine in the bladder. Many of the patients were severely stunned, and continued in a state of stupor for a length of time.

3. Contusions and lacerations, from the shock of the passengers against each other, or against the inside of the carriages. In three persons there was fracture of the lower jaw: the bone had been pushed violently backwards, and the chin was flattened.

4. Contused wounds of the lower extremities by the falling in of the benches, luggage, &c. In some the leg was completely crushed, and the wretched sufferers could not move from the flames that were rapidly gaining upon them.

5. Burns.—So intense had been the heat of the flames, that, on the declivity of the part where the accident took place, a quantity of melted glass and silver was found. None of the persons, whom the flames reached, escaped destruction; and hence all the cases of burns, admitted into the hospital, were caused by the steam of the boiling water. The boiler of the first locomotive engine having burst, the water and steam rushed out with immense force, and scalded a great number of the passengers. The following remarks by M. *Berard* deserve notice:—

"Other things being alike, burns are more severe and deep when caused by bodies in a state of ignition, than by those that are only highly heated. Hence burns caused by the vapour of boiling water are never so serious as those produced by the clothes catching fire, &c. We know also that all dense bodies are good conductors of calorie, and that the application of them in a heated state to the body will give rise to greater mischief, than that of others which are light, or which long retain their heat. In this twofold respect, the vapour of boiling water occupies the lowest place among bodies which produce burns. There are however certain circumstances connected with this agent, which tend to make its action much more severe than it would otherwise be. In the first place, we may mention that the heat of steam is often much higher than that of the boiling point; and secondly, although it has but a feeble density, and consequently only a few of the heated molecules touch the surface of the body at the same time, we should remember that, in reason of the incessant projection of the vapour, there is a constant renewal of the hot particles, and hence that, if the action is kept up for a few seconds, there will result on the whole an amount of contact equal to what would be produced by the application of a solid body:

moreover, whereas the latter becomes cooler and cooler, the heat of the former is as great as at first.

"In addition to the circumstances now mentioned, we may notice another peculiarity which steam has with other fluid bodies, viz.: that it is applied immediately and exactly to every part of the body that it touches; to all the projections, depressions, and inequalities, so that every part is equally burned. More penetrating than water, it insinuates itself even into the mouth and nostrils, and may thus reach the air-passages, giving rise to the most distressing accidents. One of our patients, in whom the face was severely scalded by the steam, and who was probably screaming at the time, with his mouth open, exhibited many superficial eschars on the tongue, palate, &c. and from the great pain he felt all along the trachea, there is little doubt but that the steam had been drawn in even within the chest.

"There is still another circumstance which gives great danger to this kind of burn. However narrow may be the opening through which the steam escapes, the steam immediately expands in volume, assuming a conical shape. Hence the burn which it causes is usually extensive, and sometimes over the entire surface of the body. We need scarcely say, that the danger of burns is much influenced by the extent of surface affected. The clothes, too, of the unhappy sufferer become saturated with the hot moisture, and thus tend to aggravate the mischief already produced."

The post-mortem examination of those, who died from the effects of the burns, confirmed the accuracy of the description given by the late Baron *Dupuytren*, that the appearances usually found are such as depend on a sort of *raptus sanguinis* to the internal organs.

With respect to the treatment of the cases, in most, carded cotton was applied to the burned surfaces. In some cases, this application did not suit well, and it was replaced with a mild healing cerate.—*Annales de la Chirurgie.*

We observe that the application of carded cotton is a favourite remedy with many French surgeons in burns of almost all degrees. It surely cannot be suitable where the surface is vesicated, and is moist from discharge; nor can it have the slightest efficacy in more severe cases, where the integuments are fairly sphacelated. Terebinthinate liniments and ointments are infinitely more useful in a multitude of cases: the use of the carded cotton—although occasionally it seems to answer very well—belongs to the "medecine expectante."

TREATMENT OF WRITERS' CRAMP BY SURGICAL OPERATION.

In our number for July last, we mentioned that Dr. *Stromeyer*, of Hanover, had performed the operation of dividing the contracted muscles and tendons of the fingers in that most annoying complaint, which has been called "writers' cramp," or "stammering of the fingers." We then expressed our strong disapproval of all such surgical treatment, and our decided conviction that it would seldom produce much benefit, and that not unfrequently it would cause a greater mischief than what is was intended to relieve.

Our anticipations seem to have been not without foundation, as will appear from the following statements.

In two cases recently operated on by M. *Dieffenbach* of Berlin, not only did the spasmodic movements continue unrelieved, but a permanent rigidity of the affected finger supervened. Not much more successful seems to have been the following case in the practice of the distinguished surgeon of Germany, M. *Langenbeck* of Göttingen.

Professor T.——, one of his colleagues, found in the course of the year 1838 that, when he had been writing for some time, his right hand became affected

with an unusual sense of weariness. Ere long, this annoying feeling passed into a complete inability of holding a pen in his hand; whenever he attempted to do so, the fore-finger was irresistibly drawn upwards, and he could not then bring it down to keep the quill in its place. The result was, that he was obliged to give up all attempts to write. A variety of means were tried, but without avail, except the endermic use of morphia: the relief, however, thus obtained, did not last above a week; and the complaint returned, as troublesome as ever. In April, 1841, M. *Langenbeck* performed the operation of dividing the contracted tendon. As the proper extensor muscle seemed to be that chiefly affected, the section was limited entirely to it.

When the patient attempted to write immediately after the operation, he found that the fore-finger still started up as much from the pen as ever, and at the same time it was observed, that there was a very visible projection of the tendon of the common extensor muscle; this tendon was therefore divided across. No sooner was this done, than the patient could move the finger in all directions with perfect ease. For a few days afterwards, the extensor tendons of the other fingers were occasionally affected with spasmodic twitchings.

After three weeks quietude of the hand, the patient attempted to write, and found, to his great pleasure, that he could do so without any repetition of his troublesome complaint. Ere long, however, it returned, but certainly not in the same degree as before the operation.*—*Allgemeine Zeitung.*

THE DEATH OF THE DUKE OF ORLEANS.

In our last number we gave a brief narrative of the circumstances connected with this most lamentable accident, and described the state of the unfortunate Prince during the few hours he survived, and the appearances which were found on the examination of the body after death. Several of the French journals have canvassed the question, how did the accident take place; did the Prince leap out, as was generally asserted at first, or was he thrown out by the tilting of the carriage? Let us briefly notice one or two circumstances. It will be remembered, from the report of the dissection, that by far the most severe injuries of the head were upon the left side, and also that the left hand and hip were found to be much bruised. But then there were likewise contusions not only on the right side of the face and head, but also on the front of both knees.

Now the question comes to be, in what manner are we to account for so many injuries in different and in opposite parts of the body.

One writer in the Gazette des Hôpitaux, M. *Legros*, one of the most experienced pupils of *Dupuytren*, suggests that the Prince fell on his face, and that a heavy crushing body must then have passed over the back of the head. But this idea is quite hypothetical; we have not the slightest reason to believe that the wheel—and what other body could it be?—passed over him. Indeed, the carriage had passed even before the Prince reached the ground.

The next supposition, which has been suggested by M. *Tanchou*, is still more improbable. He imagines that the Prince leaped out and fell upon his feet, and that all the severe injuries of the head were the result of a *contre-coup*, produced by the general shock or commotion of the body.

* We shall not, at present, recur to the question, how such cases are to be treated, as we fully expressed our sentiments on this head in our last Number. A surgical operation for the relief of the complaint is about as inadmissible as for the cure of stammering; and we suppose we shall not again hear of this brilliant exploit for some time to come.—(*Rev.*)

"The commotion," says he, "may have been communicated along the spine to the base of the cranium, where it produced all the mischief—the fracture of the Sella Turcica, of the great wing of the sphenoid bone, the disunion of the squamous, and of the spheno-petrous, the lambdoidal, the sphenoidal, and the mastoid sutures on the left side—except the contusions of the right cheek and temple, and of both knees in front, which might have occurred when the body reached the ground. If the Duke (continues M. *Tanchou*) had been thrown from his carriage, his head would have first struck the pavement; the contusions on it and on the face would have been more severe than they were, and the cranium would, in all probability, have been driven in and depressed."

By far the most likely supposition is that adopted by M. *Marchal*. He imagines that, when the Prince stood up in the carriage to see what was the matter with the horses, the groom, who was seated behind, got up also, and was proceeding to get down to run to the horses' heads. The vehicle—which was extremely light, and was hung on very elastic springs—oscillated or tilted at the time, and the effect of this was to jerk the Prince out, as he was then standing up. Most probably he fell on his left side and back, the head coming to the ground first; he then, it is supposed, got up, staggered and fell forwards.*

This is by no means unlikely, as we know of numerous cases where patients, after receiving the most frightful injuries of the head, have risen up unassisted, and stood for a minute or two. That the Prince fell on his left side is confirmed by the circumstance of one of the silver stars on the hilt of his sword being almost entirely effaced: probably he had hold of the handle with his left hand, which, it will be remembered, was a good deal bruised.

We have not hitherto alluded much to the *attrition* of the anterior lobes of the brain, the structure of which was so much softened and pulpy, that the cerebral matter could be washed away by a stream of water squeezed from a sponge. Now this attrition must have been produced either by a direct blow on the part or by a counter-blow. The idea of the first is scarcely admissible, seeing that the os-frontis was not broken at all, and the tegumentary coverings were not very severely contused. We may therefore suppose that the injury was the result of the violent commotion of the brain produced by the fall on the occiput.—*Annales de la Chirurgie.*

M. D'ARCET ON PURULENT ABSORPTION.

As forming a sort of supplement to the observations of MM. *Tessier* and *Blandin* on the subject of purulent infection, we introduce here a summary of the most interesting statements in a memoir recently published by M. *d'Arcet*, who is well known as one of the ablest chemical pathologists of the present day.

The starting-point of his inquiries was naturally the study of those changes, which purulent matter is liable to undergo on exposure to atmospheric air or oxygen gas. Under such circumstances, we observe that its globules become agglomerated, many of them joining together; they form themselves into fibrinous (couenneuses) plastic membranes, somewhat analagous in appearance to the buff of inflamed blood; this amorphous layer soon floats on the surface, the subjacent fluid remaining more or less troubled. If the action of oxygen be continued longer, the whole becomes affected with putrid decomposition, although the sort of false membrane, which had separated, remains undissolved.

The purulent matter has, it is found, undergone two important modifications.

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* A boy, passing at the time, said that he did not see the Prince fall at first, but that he saw him rise up and fall down immediately afterwards.

On the one hand, and *mechanically*, it has become an insoluble, inert and granulated substance, which is not sufficiently fine to circulate along with the blood, and which has lost its capillary size and acquired another which unfits it for permeating the minute vascular divisions. On the other hand, and in a *chemical* point of view, the contact of the air with purulent matter causes the production of a blackish putrid liquid, which exhales an extremely fetid odour, similar to that of the sanies from animal matter in a state of complete decay.

M. *d'Arcet* regards this matter, resulting from the decomposition of pus, as analogous to that which gives rise to, or constitutes, certain miasms and cadaveric exhalations—organic vapours whose nature or essence escapes our detection, and which are known only by their hurtful effects.

To ascertain the effects of the introduction into the living body of purulent matter, in its natural and in its decomposed state, M. *d'Arcet* has performed a number of experiments on animals: we shall briefly notice three.

1. *Experiments with the First Product of the Spontaneous Decomposition of Pus.*

If pus, that has been exposed to oxygen gas for some days, be carefully washed, to free it from the serum, first with distilled, then with slightly chloruretted, and lastly with distilled, water, and if it be then injected into the veins of a dog or rabbit, we observed that the phenomena vary in different cases, according to the quantity of foreign matter introduced into the circulation. In some, the animals were killed almost immediately; in others, after a few moments of syncope and inertia, they rose up, remained for some time in a state of weakness and prostration, but ultimately recovered entirely; while, in others, the prostration increased, the pulse became sharp and hard, the breathing hurried, and the animal died in from 40 to 50 hours in a sort of asphyxiated condition. When this last state takes place, the lungs were found on dissection to exhibit phlyctenæ, with sub-pleural ecchymoses penetrating into the pulmonary parenchyma, and having in their centre a strongly hepatised nucleus. On two occasions only has M. *d'Arcet* found in the centre of some of these ecchymosed spots a circumscribed nucleus, exhibiting a perfect identity with the multiple pulmonary abscesses in the human subject.

2. *Experiments with the Second Product of the Spontaneous Decomposition of Blood.*

If pus, that has been left exposed to the air until it becomes putrid, be filtered, we obtain a yellowish alcaline serosity, which has the property of blackening silver; it evidently contains some sulphuretted ingredient; but it is very doubtful whether its poisonous properties are at all owing to this, as it has been found that, even after every trace of sulphur has been removed by shaking it well with litharge, its deleterious properties continue. M. *d'Arcet* is of opinion that these are attributable to a volatile miasmatic matter, analogous perhaps to a ferment, (azotised and almost organised as it is known to be,) and having the property of keeping up the primary action which its admixture with the blood produced at first. The continuity and the slowly progressive malignancy of its effects on the system may be viewed as arguments in favour of its analogy with a ferment.

This fluid was injected into the veins of several dogs. The following is the account M. *d'Arcet* gives of the phenomena observed: "Hiccup, vomiting, diarrhœa, shiverings, febrile heat, and difficulty of breathing are noticed at first; to these symptoms succeed great loss of power, and general prostration, stupor, the involuntary action of the bowels and urinary bladder, hæmorrhages from different parts, a pale pasty appearance of the mucous membranes, abdominal pains and twitches, &c., until at length death supervenes. The fatal issue is sometimes quite peaceable; at other times it is preceded by convulsions or general tremor."

On examining the lungs after death, they are found to be purplish, indurated, spotted over with ecchymoses under the surface of the pleura and also between

the lobules of the pulmonary substance; the spleen, liver, and intestines frequently exhibit the same appearances. The blood is fluid, dark in colour, and of an oily or pitchy appearance, containing grumous coagula, which, when squeezed between the fingers, do not convey the sensation of a fibrinous substance to the fingers.

3. *Experiments with Pus 'en nature.'*

Most frequently, the injection of unaltered purulent matter into the veins of animals has produced symptoms during life and lesions after death, very similar to those observed in the second series of experiments. Twice only out of eleven or twelve cases did M. *d'Arcet* find small isolated abscesses in the lungs. These had many of the characters of the multiple abscesses properly so called; but differed from them in this respect, that they were rather sub-pleural than lobular or intra-lobular.

The circumstance now mentioned may be, in part at least explained, by the quickness with which the admixture of the pus with the blood takes place in our experiments, and the slow and gradual manner in which it occurs in natural disease; as, for example, after surgical operations.

According to the ideas of M *d'Arcet*, the etiology of purulent infection may be stated thus:—At the moment when the purulent matter, that has become blended with the blood, reaches the lungs and is there exposed to the action of the oxygen of the atmosphere, important changes—rather of a *physical* than of a *vital* nature—take place in its constitution. Its elements separate into two parts: the globules, by absorbing oxygen, congregate together and become more bulky, so that they are no longer capable of traversing the capillary vessels, and consequently block up their calibres in the same manner as mercury, gold, charcoal, &c. do; giving rise to a series of changes which are known to be induced by the introduction of these substances into the circulation. The fluid portion of the pus acquires, from the operation of the same cause, putrid properties, which will thus occasion the phenomena which we have mentioned above—a phenomena identical with those observed after the injection of decayed matters into the circulation.

It appears, therefore, from these considerations, that the disorders, which constitute what has been called purulent infection, are complex and may be arranged under two heads: 1. A lesion of the lungs, liver, or some other internal viscus—a local and mechanically induced inflammation of those organs, whose capillary tissue has been obstructed by the insoluble and pulverulent principles, which have become developed in the pus from its exposure to the air in the pulmonary vessels; and 2, A poisoning, or contamination of the whole system, caused by the absorption and circulation of certain principles of the pus in a putrid state, which act in a special manner on the blood, and induce serious constitutional symptoms, such as are observed in the worst forms of fevers, as in malignant typhus, the plague, purpura, glanders, and carbuncle—diseases which the old physicians always denominated *putrid*.

The researches of M. *d'Arcet*, on the morbid affections resulting from the admixture of purulent matter with the blood, have led him to observe some interesting phenomena not immediately connected with his theory. For example, he has ascertained that albumen is very generally present in the urine of patients, in whom the spontaneous absorption of purulent collections is going on. This circumstance only denotes the introduction of the serosity of the pus into the blood. We can readily understand how the most liquid portion of this morbid fluid, after having been, as it were, filtered through the pyogenic membrane of the local abscess, may thus permeate the entire circulatory system, without impediment and without giving rise to those phenomena which the presence of pus 'en nature' is known to do.—*Gazette Medicale.*

PHLEBITIS OF THE VENA PORTÆ AND OF THE HEPATIC VEINS.

Case 1.—An aged man was admitted into La Pitié Hospital in June, 1841. For some weeks past, he had been distressed with frequent returns of retching, and with an obstinately constipated state of the bowels. On the day of his admission, he had several attacks of sickness and shivering; he complained also of a continued dull pain in the right hypochondrium, and occasionally he experienced paroxysms of sharp pain in the stomach, like those of colic or cramp.

For several days the pain became more and more severe, and symptoms of jaundice made their appearance. The attacks of shivering were followed by flushings of heat, and by perspirations; the tongue was dry, and covered by a dark coating; there was occasional hiccup; the stools were liquid, and of a greenish colour; the pulse was 96. The cupping-glasses were ordered to be applied over the right hypochondrium, and, as there was a well-marked febrile paroxysm, like that of an ague, quinine was administered. The use of this medicine was continued for several days, but without benefit; the hiccup still continued; the attacks of shivering, followed by heat and perspiration, returned every day with more or less regularity; the skin retained its jaundiced hue; and the pain in the right hypochondriac region was unrelieved. The consideration of these symptoms, coupled with the circumstance of no lesion being discoverable in other organs of the body, led to the suspicion that there was an *hepatic phlebitis*. (Was this an after-thought?) The patient became gradually weaker and died.

Dissection.—The liver was of a normal size; its structure, in different places, was much softened, and here and there was almost diffluent: the gall-bladder was full of healthy-looking bile. An accidental incision about the root of the liver was followed by the discharge of some sanious fluid, mixed with small flocculi of pus. On examination, this was found to have come from the vena portæ. On tracing the divisions of this vessel, we found on the trunk of the superior mesenteric vein a foreign body, which was immediately recognised to be a fish-bone. It was fixed in the head of the pancreas, traversed obliquely the anterior wall of this vein, and, fairly passing through it, stuck in its posterior wall; the cavity of the vessel was obstructed by membranous deposits, adhering firmly to its walls; these extended from the openings of the small veins, which come directly from the upper part of the jejunum, to the orifice of the splenic vein. This last-mentioned vein seemed normal in point of structure; but it contained a certain quantity of a fluid, like the lees of wine, and similar to what was observed on first opening the vena portæ. The vena portæ itself was found partially obstructed by portions of coagulable lymph, which did not adhere at all firmly to its parietes; its sinus was full of purulent matter blended with blood. Some of its larger divisions exhibited on their inner surface distinct traces of inflammatory action; their contents resembled those of the mesenteric veins, being like the lees of wine, as already described. In a few, coagula were found; these were occasionally observed to extend into the very minute ramifications.

Case 2.—A man, 48 years of age, was admitted into La Pitié Hospital, in April, 1841. He had for some time been annoyed with stomach complaints; occasionally vomiting his food, and suffering from a dull uneasy pain in the epigastric region. In consequence of symptoms of bronchitis making their appearance, he was bled; but in the course of a day or two afterwards, he had a distinct febrile paroxysm, commencing with a shivering and followed by a hot and sweating stage: quinine was accordingly given. Although at first this medicine seemed to do good, the paroxysms soon returned; the patient's strength sunk rapidly; he vomited the little food he took, and a troublesome bilious

diarrhœa came on. The fever, which was for some time distinctly intermittent, became at first remittent and subsequently continued: he died in the beginning of June, having been between six and seven weeks in the hospital.

Dissection.—The interior lobe of the right lung exhibited all the characters of pneumonia in its second stage. In the inner surface of the stomach, near its pyloric extremity, there was a hardened ulcer of the size of a two-franc piece. The liver was of a normal size; but its structure was fatty, and was of a yellowish straw colour. Seven or eight *metastatic* abscesses were found disseminated through the hepatic substance. One was as large as a hen's egg; it was situated near one of the trunks of the hepatic veins, which terminate in the vena cava. This vein had become inflamed, and, at the distance of a few lines from its termination in the venous trunk, exhibited a patch of distinct ulceration: nearer to the vena cava, the internal surface of the vessel was covered with shreds of coagulable lymph. Beyond the seat of the ulceration, the vessel presented marks of violent inflammation; its tube being almost obliterated by effused lymph and by a clot of blood. In consequence of this obstruction, all the ramifications of the vein were filled, even to their minutest divisions, with coagulated blood. There was thus a natural and solid injection of the venous tree, that enabled us to trace with the greatest ease its entire distribution, even to the surface of the liver, which was speckled over with patches of a dark colour, in consequence of the capillary veins in these places being filled with coagulated blood.—*Archives Generales.*

Remarks.—The reader will remark that, in both these curious cases, the daily recurrence of feverish symptoms—shivering, heat, and sweating—misled the medical attendants to imagine that their patients were affected with ague; whereas, in truth, it was hectic fever induced by internal disease. We have seen this mistake committed on more than one occasion in pulmonary phthisis, when the cough and other thoracic symptoms were unusually little prominent. Under such circumstances the use of the stethoscope, in the hands of an experienced auscultator, will prevent the mischief of an utterly erroneous diagnosis.—(*Rev.*)

SPONTANEOUS LUXATION OF THE HIP-JOINT.

Authors have differed a good deal in their explanation of the mode in which this accident is produced. 1. Some have attributed it, on all occasions, to a collection of fluid within the capsular ligament gradually forcing the head of the bone out of its socket, and thus exposing it to the efforts of those muscles which are attached to its neck and shaft. 2. Others have supposed that the displacement is, in most cases, owing to the formation of a solid tumour within the cotyloid cavity, and to the consequent extrusion of the head of the femur from thence. *Bichat*, *Boyer*, *Lobstein*, *Dzondi*, &c. say that this swelling in most cases arises from a chronic inflammation of the cartilages of the joint. Dissection, however, does not reveal to us this alleged morbid state. The same objection may be made to the opinions of *Gorter* and *Andry*, that there is usually an exostosis or a deposition of hardened callus within the joint. *Valsalva*, *Portal*, and *Morgagni* believed that it was rather the adipose substance at the bottom of the articular cavity than its cartilaginous investment, that becomes the seat of thickening and induration; this may hold good in some cases, but certainly not in all. Lastly, some writers have supposed that it is the head of the femur itself that becomes so much swollen as to be too large for its socket, and therefore to be extruded from it. 3. The most modern theory, and that which is held by most surgeons of the present day, is that spontaneous dislocation of the thigh is

ılt of a caries of the bones—either of the edges of the articular cavity, or of
l of the femur, or of both these parts at the same time.
arise seems to incline to the first theory, viz: that which attributes the
. to a gradual accumulation of fluid within the cavity of the joint, whereby
l of the bone is fairly, but gently, pushed out of its socket. He does not
r adduce any pathalogical proofs of the soundness of this opinion; although
ily admit that, to us, it seems the probable one, in those cases at least
ıo symptoms exist to indicate inflammatory or ulcerative disease about the
Archives Generales.

MISCELLANEOUS NOTICES.

1. *Menstruation.*

re de Boismonte, in his recent Prize Essay on Menstruation, gives the
of an old maiden lady who died at the age of 72, up to which time the
ıia had continued to return (very irregularly indeed) from her 24th year,
ıey made their first appearance.

The Constitution of the Blood.

lern experiments have distinctly shown," says Dr. *Mandl*, "that the fluid
of the blood, in which the globules float, hold the fibrine in solution during
of the animal. As soon as the blood escapes from the vessels, the fibrine,
vas dissolved, coagulates; and, enclosing the red globules in its meshes,
ıe crassamentum or clot. The sanguineous fluid, deprived of its fibrine
globules, is known by the name of serum." . . . . . .
fibrine, when once coagulated, is insoluble in water, hot or cold; but it
s in a solution of potash; becoming at first converted into a jelly, and
ly forming a uniform fluid of a slightly yellowish colour." . . . "We
lerstand what takes place when we macerate a spot or stain of blood in
The water dissolves the colouring matter, which falls down in the form
striæ to the bottom of the vessel. On heating this reddish liquor, the
ı, will be separated either in distinct flocculi, or as a milky cloud, accord-
he quantity of water employed. Lastly, there remains an insoluble part;
the fibrine; which, as we have already said, is insoluble in water, hot or

3. *Ingratitude of Mankind to Jenner.*

d small-pox been known among the ancients, and a man had arisen and
how its fatal effects might be arrested, he would unquestionably have been
ed among the deities, and temples would have been reared in his honour.
lays, the world is scarcely even aware that such a man as *Jenner* ever
far less does it understand what he did for the human race."
thank our French brother for this handsome compliment to our immortal
man.—*Rev.*)

4. *Style of Medical Writing.*

riting on a scientific subject, it is no easy thing to avoid the negligent
a conversational style on the one hand, and the stiffness of a professor's
on the other. The latter is the more frequent fault of the two. He, who
ıs that every word must be sonorous and that every phrase should *tell*,
ver write well. All ambitious high-sounding words should in general be
l. The physician *Silva*, so often mentioned by *Voltaire*, wrote to a pe-
acquaintance of his, that he (the latter) sometimes combined, in his pre-
ns, articles that were so little marriageable (*si peu nubiles*) that they would

not form an alliance. A physician of the present day, alluding to leeches that would not bite, actually said that they were by no means *philanthropic*. "The style of such people," says *Richter*, "always reminds me of the tail of an English horse; if it cocks up, this is only from the nerve being cut."

5. *Out and Out-ism. A new Name.*

At a recent meeting of the Academy of Medicine, M. *Piorry*, the great plessimetrical doctor gave it as his opinion that "in the present day, a medical man cannot be much deceived in the diognosis of diseases, as he does not content himself with creating a malady from a group of symptoms—a method that is necessarily fallacious—but sets about to discover the physical condition of the affected organs by means of measurement, percussion and auscultation." A writer in the *Gazette Medicale* very justly remarks on this extravagant assertion—"without entering upon the theoretical part of this problem, we should like to ask M. *Piorry* by what means he can measure a headache, auscult prostration, percuss stupor, or plessimetrise delirium; for all these phenomena are symptoms, and it is such symptoms as these which, before a post-mortem examination, constitute typhus fever."

M. *Renauldin*, at the same learned meeting, expressed a hope that in future the disease in question should be called *typhode*, and not *typhoïde*, fever. We do not clearly see the motive of the proposed change; but, at all events, "cette diabolique fievre" has certaintly got quite enough of names already.

6. *Important Discovery in Pathology.*

A Mons. *Pascal*, chief physician of the military hospital at Strasbourg, announces to the Royal Academy the discovery of "une lesion speciale" in typhoid fever, and which, although constantly present, has never been noticed before. "It is," says he, "the generative phenomenon which explains all the apparent contradictions in the history of this much-discussed disease." This lesion is a *latent, subacute*, and *progressive inflammation of the membranes of the brain:* it always co-exists with the phlegmasia of the mucous membrane and glands of the bowels.

Dr. *Clutterbuck!* it is very obvious that your fame has not reached so far as the great emporium of stuffed geese and truffles.

7. *Curious Title of a Work.*

Within the last year, there has been published in Paris a complete Treatise on Practical Medicine and Surgery, being an analytical summary of the contents of all standard works, in eight volumes. The editor, Dr. *Fabre*, has aptly called it "Dictionnaire des Dictionnaires." Many a miserable author, we may suppose, has been pithed and gutted in the preparing of this scientific salmagundi. Well, well, let them comfort themselves with the thought that, if poor themselves, they have contributed to furnish a rich repast for others.

8. *Puncture of the Intestines for Tympanitis.*

M. *Velpeau* alluded in the Academy to a case of this sort, that occurred in his practice about two years ago. A variety of means having been tried without avail, he plunged a trocar into the abdomen (dans un intestin), and gave vent to a large quantity of gas by the canula. In the course of five days, he made four different punctures. The man recovered perfectly.

9. *Simple Means to stop Hæmorrhage from the Nose, &c.*

Professor *Negrier* of Angers (in a recent number of the Archives Generales) has published several cases to show that, by merely raising the arms perpendicularly, and keeping them in that attitude for some time, he has succeeded in arresting very troublesome bleedings from the nostrils and other parts of the head;—*if* such be the case, the hint is a useful one.

Clinical Review.

CLINICAL MIDWIFERY, WITH THE HISTORIES OF 400 CASES OF DIFFICULT LABOUR. By ROBERT LEE, M.D. F.R.S. &c. and Lecturer on Midwifery at St. George's Hospital. 12mo. pp. 224. Churchill, London, 1842.

THIS is a most instructive compendium, or catalogue *raisonnée* of all the cases of difficult parturition, which have occurred in the practice of the author during the last fifteen years. There is no man in the profession more generally esteemed, or whose opinions are received with more confidence and respect by his brethren, than Dr. *Lee*; and well does he deserve, for most assiduously has he worked for, the eminence to which he has attained.

After distinguishing himself as a most able obstetrical physiologist, (if we may so speak) he is now recognised as one of the best practical accoucheurs of the metropolis. We need say nothing more in recommendation of the present volume. It reminds us a good deal of the excellent practical observations of Dr. *Ramsbotham*, (senior,) and the valuable report of Dr. *Collins* of Dublin, both of which works we copiously reviewed some years ago in this Journal.

The importance, nay the necessity, of a competent knowledge of midwifery, is now acknowledged by every examining body in the kingdom; even the College of Surgeons, which has been so tardy in permitting any change in their routine of examinations, has at length required it of their candidates.

If there is one branch of professional practice which should be thoroughly well understood by every medical man, before he commences on his own account, whether in the country, or abroad, or in either of the public services, we should say it is midwifery. A practical work, therefore, like the present, cannot fail to be truly useful; more especially as there is no little discrepancy of opinion between British and Continental accoucheurs, on many of the leading and most important points of practice.

This seems strange, as nearly the same description of cases must occur in all countries alike—at least, in such as are in a state of civilization—and the same sorts of difficulties and of dangers must be met with everywhere. Yet the mode of treating these, recommended by obstetrical writers in France, and indeed in most countries abroad, differs most widely from that pursued by all the leading authorities with us. Let us take a few instances alluded to by Dr. *Lee*.

The *forceps* is very rarely employed in this country, before the os uteri is soft and well dilated, or before the head of the child has descended so low into the pelvis that an ear can be felt. It is used solely with the view, as our author says, of supplying that power which the uterus does not possess at the time. Hence it is chiefly in cases of great exhaustion, or of hæmorrhage, or convulsions, or of other accidents where it is necessary to expedite the delivery of the child, that the British accoucheur has recourse to the use of the instrument. If the pelvis be considerably deformed, or if the soft parts be still rigid and unyielding, he prefers other means to effect the same end.

Now mark the difference in these respects on the part of French physicians:—

"The employment of the long forceps in cases of distorted pelvis has been recommended by Baudelocque. Boivin, Lachapelle, Capuron, Maygrier, Velpeau, and Lamrnant, whose works contain ample instructions for its use, before the head of the child has entered the brim of the pelvis: and the last of these writers has expressed his belief, that the instrument is more frequently required while the head of the

child remains above the superior aperture of the pelvis, than after it has descended into the cavity."

We need scarcely say how injudicious, nay how dangerous, such practice must necessarily be.

Take, again, the subject of *craniotomy*.

Dr. *Lee* thus clearly points out the circumstances which warrant and require the performance of this operation; "It is performed," says he, by all British practitioners of reputation, whether the child be alive or dead, if the condition of the mother is such as to render delivery absolutely necessary, and the head of the child is beyond the reach of the forceps, or where, from distortion of the pelvis, or rigidity of the os uteri and vagina, it cannot be extracted if its volume is not reduced. This operation is performed from a conviction that, if neglected to be done at a sufficiently early period, the mother's life will be sacrificed, and the life of the mother is considered as much more important than that of the child."

The French condemn us for unnecessarily sacrificing the life of a child on many occasions! According to them, the operation of craniotomy should never be resorted to, until it has clearly been made out that the fœtus is dead, whatever may be the state of the mother at the time. *Baudelocque* expressly says, "nothing can excuse the conduct of the practitioner who would perforate the head of the child without previously knowing, with certainty, that it was not alive, a circumstance which can alone authorize us to employ the perforator and crotchet;" and *Velpeau* —whose authority, by-the-bye, we should not value much—goes even farther than this, and maintains that, even when the child is dead, if the diameter of the pelvis is only 15 lines, or if the whole hand cannot be passed into the cavity of the uterus to turn the child, the Cæsarean operation is to be performed. Pity the poor French women who are entrusted to the tender mercies of such an accoucheur, say we. The practice of many of the leading accoucheurs in Germany is much alike. If the child be alive, and if there be no room for it to pass, the general rule seems to be to perform *hysterotomy*, or the Cæsarian section, rather than *craniotomy*.

Let us now for a moment consider the results—as well as we can judge from published reports; for, as Dr. *Lee* observes, not a few fatal cases on the Continent are never made known—of the former frightful operation.

Michaelis has collected the reports of 258 cases, of which 144 occurred in the last, and 110 in the present century: of these cases 140 proved fatal. *Velpeau* tells us that the operation was performed 28 times between the years 1810 and 1820, and 62 times between 1821 and 1831—a statement which confirms what we have heard said, that the frequency of the operation on the Continent is, of late years, on the increase. Dr. *Churchill* says that it has been performed 316 times during the last ninety-one years. and that the mortality has been 52.8 per cent. for the mothers. (Is it not higher than this?)

Our readers need scarcely be told that the Cæsarean section has very rarely succeeded in this country. The cause is abundantly obvious. The unwillingness to have recourse to so terrible a resource, unless the life of the mother peremptorily requires it. "There is no eminent accoucheur now practising in London, who has been present at the performance of the operation upon the living body, or who would recommend it, if delivery could be effected by the perforator and crotchet."

Long may our countrymen continue to act on this principle. Where are the circumstances that can ever warrant the certain endangerment, nay often the more than probable sacrifice of a mother's life for the chance—and, be it remembered, it is nothing more—of preserving that of her child? How few of the children that, "have been ripped from their mothers' belly," like the Thane of Cawdor, have been reared! and then think what a miserable end for a poor creature, after undergoing the sharpest pangs that flesh can know, to be subjected to a painful

and bloody operation, not for her own, but for another's possible, advantage! Every principle of humanity and religion is opposed to such a practice; nay, even the cold dictates of mere science and physiology must condemn it. Why, then, it may be asked, should practitioners abroad have recourse to it with so little hesitation? The answer is simple, and will at once be surmised by those who are at all acquainted with medical practice on the Continent, and more especially in France. Patients, at least those among the poorer classes, seem to be regarded, not so much as fellow-creatures that have the same hopes and fears and the same feelings and destinies as ourselves, but rather as objects, so to speak, of natural history, which the learned doctor has to speculate and experiment upon.

The golden rule, not to do unto others what we should not wish done unto ourselves in similar circumstances, is too often forgotten by us all.

The last subject of discrepancy of opinion between British and Continental accoucheurs, that we shall notice at present, is the very important one of *inducing premature labour*, when the life of the mother is endangered by allowing pregnancy to go on to its full period.

"In numerous cases," we avail ourselves of Dr. *Lee's* own remarks, "it has been successfully employed in this country, and it is now ascertained that the operation is attended with little risk to the mother, and that nearly one half of the children are born alive and continue to live where it is performed after the seventh month. In cases of great distortion of the pelvis, the induction of premature labour at an early period of pregnancy, before the sixth month, is likewise known to be a safe operation, and to render craniotomy and the Cæsarean section wholly unnecessary."

In Germany and Holland, the operation has of late years been frequently resorted to, with very satisfactory results; and in these countries the practice is gradually rising in estimation. Not so in France. There is scarcely a single obstetrical writer who approves, or has performed, it. *Baudelocque* and *Dugès* condemn it, and Mad. *Lachapelle*, the celebrated "sage-femme" of Paris, tells us that she has never either employed it nor seen it employed. The Academy of Medicine held a long discussion, in 1827, on the propriety of the practice, and the learned body then decided that it was unjustifiable under any circumstances!* We have very little doubt but that this judgment will be reversed ere long, and strongly suspect, at the same time, that our enthusiastic confreres will be, one of these days, "going a-head" of their neighbours on this very subject: *nous verrons.*

Let us now rapidly glance at the several reports, or sets of cases, related by Dr. *Lee.*

Report I. gives the histories of 55 cases of difficult parturition, in which the forceps was applied. Many of these are very interesting, and deserve to be studied by the obstetrical practitioner, but we cannot afford space at present for the particulars of any. We observe, in one report, the following very candid admission.

"It would have been much better practice in this case, had I abandoned the attempt to deliver with the forceps, when the head could not be extracted by moderate traction. The unwillingness to resort to craniotomy, knowing that the child was alive, led me to commit what I believe to have been a practical error, and which would have been avoided, had the condition of the mother only been taken into consideration."

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* If we mistake not, M. *Dubois* of Paris communicated, in the course of last year, to the Academy the reports of one or two cases in which he successfully induced premature labour, in consequence of extreme deformity of the pelvis.

Dr. *Lee* closes this chapter with a few practical remarks—it is to be regretted that they are not more ample—which our readers will thank us for giving. After mentioning that, 17 only of the children were born alive, and that, in several of the cases, the perineum and the vagina had been more or less injured from the injudicious employment of the forceps, he says: "In none did any benefit result from the instrument, before the greater part of the head of the child had passed through the brim of the pelvis, and the orifice of the uterus was fully dilated;" and again, "in protracted labours, when the head has made no sensible advance for hours, and becomes compressed, the scalp puffy and swollen, the vagina dry, hot, and tender, the discharges offensive, and when the bladder cannot be emptied without the catheter, it is dangerous to trust longer to the natural efforts. If, along with these symptoms, there is tenderness of the abdomen, fever, incoherence, restlessness, and exhaustion, delaying long to deliver is invariably followed by the most injurious consequences."

We need scarcely say that, when such symptoms as these are present, bloodletting, the use of the tartrate of antimony, &c., should be resorted to, before recourse be had to instrumental aid. Much mischief is often done in tedious labours by the injudicious exhibition of ergot of rye; a remedy which has been so lavishly and thoughtlessly used of late years.

Report II. describes 65 cases of "difficult labour from distortion of the pelvis, swelling of the soft parts, convulsions, hydrocephalus in the fœtus, and other causes, in which delivery was effected by craniotomy."

Many of these cases very forcibly inculcate the importance of avoiding too long delay in effecting the delivery, and the danger that is apt to follow from neglect of this rule.*

A difficult and protracted labour is, in many respects, a good deal like a case of strangulated hernia: the danger is more in the operation for relief being put off too long, than being performed too early. Dr. *Lee* very feelingly remarks on one case, where the patient died in twelve hours after the extraction of the child with the crochet: "the result of this case would probably have been very different, had we proceeded to deliver twenty-four hours sooner, (the symptoms

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* As a curious and not uninstructive case, the following will be read with interest.—

"A dwarf from the Mauritius, Santiago de los Santos, married an English woman at Birmingham, whose height was three feet and three inches. She became pregnant, went to the full period, and was in labour at Chelsea on the 14th of April, 1835, under the care of Mr. Bowden. Dr. H. Davies was consulted, and finding the pelvis greatly distorted, he opened the head of the fœtus on the afternoon of the 15th of April, and removed with the crochet a part of the cranium. At 9 P. M. we proceeded together to complete the delivery with the crochet, the outlet and brim of the pelvis being so contracted that all the varieties of craniotomy-forceps were perfectly useless, as they could not be applied. The operation lasted nearly five hours, and the head of the fœtus could not be drawn through the brim of the pelvis, until the bones of the base of the skull were all torn to pieces with the crochet; the point of which was generally passed on the outside of the head. An arm was next drawn down, and the thorax torn open and all the viscera extracted. So great was the degree of distortion, that the pelvis of the child could not be drawn through the brim of the mother's pelvis till after long-continued efforts with the crochet. We were both thoroughly exhausted before the delivery was accomplished, and it seemed at first impossible by any means to extract the child without producing fatal contusion or laceration of the uterus and vagina. On the 12th of May, the patient was walking about, and perfectly well."

ot been alarming) and I can never think of it without regret; and again, recording five fatal cases where it had been necessary to perforate the head sequence of congenital hydrocephalus, he does not hesitate to give it, as his n, that, had the cause of the difficulty been ascertained sufficiently early in cases, and the operation of craniotomy been performed, it is impossible to that some, if not all, of them would have ended favourably. The chapter with the following practical observations:—

upture of the uterus took place in three before perforation, and the inflam- n and sloughing of the uterus, vagina, and bladder, which proved fatal to others, were chiefly or solely produced by the long-continued violent pressure soft parts by the head of the child, before it was opened and extracted. In who recovered with vesico-vaginal fistulæ, or contractions of the vagina from ices, the unfortunate occurrences arose from craniotomy being too long de-

After examining all the details of these cases, I feel satisfied that in was the interference premature, and that in several, had the delivery been r effected, the fatal consequences which ensued would have been wholly pre- d."

e whole of this chapter reminds us strongly of Dr. *Collins'* excellent work; is gratifying to find that two such experienced men agree in the practice recommend.

e *Third Report* treats of the "induction of premature labour in cases of dis- l pelvis, cancer of the uterus, uterine and ovarian tumours, organic and ner- diseases of the heart, dropsy of the amnion, obstinate vomiting, hæmorrhage, the bowels, and chorea, during pregancy." Not fewer than 58 cases are re- in this chapter, which, on the whole, is certainly the most interesting and in- tive in the book. Our readers must take our word for this, until they consult themselves, as we can afford room only for a very few extracts.

The greater number of the best practical writers on midwifery in this country considered the induction of premature labour applicable only to cases of er distortion, and have considered it improper in first pregnancies, and before complete months of utero-gestation have elapsed. Little has been said by respecting the safety and utility of the operation in cases of great distortion, riate the danger to the mother of fatal contusion or laceration of the uterus agina, which are always to be dreaded when much force is required after per- on to extract the head of the child."*

one woman, whose pelvis was considerably deformed, Dr. *Lee* induced pre- e labour in no fewer than ten successive pregnancies: her first labour, at the me, had been a very severe one, and was completed only after extreme diffi- and danger with the perforator and crotchet. The plan, that our author usu- llows, is to perforate the membranes: he appears to have little or no confi- in the *secale cornutum*. On this point, Dr. *Ramsbotham*, certainly a good rity, differs from him.†

Dr. *Lee* subsequently remarks that, "in no case of distortion, however great, t be necessary to induce premature labour before the end of the fifth month of ancy, when the fœtus is so small and soft that it can be easily extracted. length of the cervix uteri before this period must render it both dangerous and ult."

At a subsequent page of his book, Dr. *Lee* observes, that he has recently informed that premature labour may be induced by the same means (the duction of a large soft dry sponge covered with lard into the vagina, and pressed up against the os uteri—by far the best remedy, by-the-bye, against e hæmorrhage in many cases of threatened abortion) without forcing the e into the uterine orifice. "I have had no opportunity of trying this

The case of a Mrs. *Jarvis* is especially interesting: after giving birth to three living children at the full period, she became affected with softening of the bones and concomitant distortion of the pelvis. She again became pregnant and went to her full time; but now it was only by breaking the head of the child to pieces that it could be drawn down with the crotchet into the pelvis. On her three successive pregnancies, premature labour was brought on, and every thing did well; but the next occasion was more unfortunate. Unusual difficulty was experienced in puncturing the membranes, and a good deal of time was lost in trying the effects of the secale cornutum. At length the liquor amnii was discharged, and labour-pains commenced; the extraction of the child was effected with the most extreme difficulty by means of the crotchet and perforator. At one time Dr. *Lee* thought that it would be necessary to have recourse to the Cæsarean operation, to prevent the woman dying undelivered. The pelvis was found on dissection to be exceedingly deformed; it is now in the museum of Sir George's Hospital. With the candour of an honourable man, Dr. *Lee* admits that it would have been much better, had premature labour been induced in this case at an earlier period.

Some of the late cases in this chapter are exceedingly interesting. There is one in which there was such violent irregular action of the heart, aorta, and carotid arteries, that several eminent physicians, who were consulted, believed that there was aneurism of the arch of the aorta. Every remedy that was tried proved utterly inefficacious, and it was determined to induce premature labour as affording the only likely means of relief. The attempt was made, but failed. This was in the sixth month of pregnancy. Notwithstanding the most unfavourable symptoms, the lady went on to her full period, had a natural labour, and was ultimately entirely relieved of all the cardiac symptoms.

There are several cases of dropsy of the amnion recorded; in some it was co-existent with ascites—a complication that will necessarily obscure the diagnosis very much. But even when the disease is simple, and when there is no abdominal effusion present, the fluctuation of the water may often be perceived through the abdominal parietes, if the uterine accumulation be very great. In all suspected cases, an accurate examination must be made per vaginam. The treatment of the disease is abundantly simple; all that is necessary to be done is to puncture the membranes and evacuate the superabundant liquor. Dropsy of the amnion is viewed by our author as one of the numerous diseases of the fœtus and its appendages, which occur quite independently of the health of the mother. Hence the child in such cases, although born alive, seldom survives long.

Unappeasable vomiting during the early months of pregnancy sometimes demands the puncture of the membranes. In case 174, the operation was done with speedy relief to the symptoms, and the lady went to the full period, and was at length safely delivered of a living child. This however is certainly not a frequent occurrence; for abortion almost always follows its performance. And let it not be imagined that the operation is quite exempt of danger. Dr. *Lee* mentions, in a report of a case where Dr. *Merriman* also was consulted, that he, (Dr. M), while he assented to the propriety of inducing abortion if every other means failed, urged the greatest caution, in consequence of a case which occurred some years ago in the practice of a celebrated accoucheur, and ended fatally after the performance of the operation, and for which he unjustly incurred much odium. As a matter of course, no prudent practitioner will ever act on his own responsibility alone in such circumstances; indeed, this rule holds good in almost

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method, but if it should always be successful in bringing on labour, there can be little doubt that it will possess great advantages over all the other means which have hitherto been employed for this purpose."

every difficult and complicated midwifery case: let a second, and even a third, opinion be if possible taken, before recourse be had to remedies, the use of which is not exempt from danger.

The *Fourth Report* is taken up with the narration of "difficult labours from presentations of the superior extremities, nates, and funis." The great lesson to be derived from this chapter is the importance of an early detection of the presenting part, so that, if turning be necessary, it may be had recourse to before the membranes have burst, and the water of the amnion escaped.

"The histories of sixty cases of arm-presentation are contained in this report, In a large proportion of these, the operation of turning was undertaken in the most unfavourable circumstances, both for the mothers and their children, after the liquor amnii had entirely escaped, and the uterus had not only been contracting for many hours around the child, but repeated unsuccessful efforts had been made to deliver. Seven women died from rupture of the uterus, and three from inflammation of the uterus. Laceration and inflammation of the uterus are, therefore, the consequences to be dreaded after turning."

The *Fifth Report* details 36 cases of hæmorrhage before delivery from the presentation of the placenta at the cervix, or over the orifice, of the uterus. We need not say how alarming this accident is on all occasions, and above all, if the flooding occurs while the os uteri is only slightly dilated, or if there be any co-existing malformation of the pelvis. Perhaps there is not a case within the whole range of medical or surgical practice that requires more moral courage and professional skill, on the part of the attendant, than uterine hæmorrhage from placental presentation. There is often no time for consultation; the physician has to act for himself; a fellow-creature's life is at stake; and it may depend upon him whether it be saved or not.

Dr. *Lee* points out the advantage of puncturing or rupturing the membranes in many cases of partial presentation of the placenta; or of alarming hæmorrhage from any cause, before delivery—a practice first strongly recommended, we believe, by that experienced accoucheur, Dr. *Merriman*. This alone will very often be followed by an arrest of the hæmorrhage; and in not a few cases, the delivery will be safely completed by the natural efforts of the uterus, and without the operation of turning. The use of the plug in such cases, we need scarcely say, is utterly useless; unless indeed to gain time for the dilatation of a rigid os uteri to take place. The employment of the ergot is often positively hurtful.

We observe that Dr. *Lee* disapproves of the practice of introducing the hand into the cavity of the uterus and pressing on or tapping its inner surface, with the view of exciting the organ to contract, in cases of alarming hæmorrhage, after the expulsion of the placenta. He says that "it is not only ineffectual for the purpose in the worst cases of this kind of flooding, but that it is attended with mischievous consequences after the hæmorrhage has been suppressed." He trusts to the use of constant and powerful pressure over the uterus, the application of cold water to the external parts, and the exhibition of powerful stimulants, especially wine and brandy: smooth pieces of ice may also be introduced into the vagina.

The remaining reports of cases of retention of the placenta, and of labours complicated with puerperal convulsions need not detain us. Many of the examples are certainly very interesting; but we miss much some practical remarks on the subjects alluded to, and which might have been introduced most opportunely at the end of each chapter, in the way of comment on the reported cases, and general rules to guide the practitioner. We cordially invite the author to make the second edition of his work more complete, by introducing here and there his own opinions more at large on the many grave questions which come under notice: the sentiments of so experienced and talented a man as Dr. *Lee*

are sure to have high authority among his professional brethren. What are the results of his observations on obstetrical auscultation? There is scarcely any allusion to the subject in the present work.

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THE Contents of the present Number are as follows:—

On Pneumonia; by H. M. Hughes, M.D.—Cases of Hæmorrhage, occurring after Delivery, and complicated with Disease of the Spleen and Kidneys; by John C. W. Lever, M.D. F.S.S.—Note on the Microscopic Globules found in Urine; by Golding Bird, A.M. M.D. F.L.S.—Case of Poisoning by Arsenic; by John Hilton, F.R.S. With the Chemical Examination of the Contents of the Stomach, Blood, &c.; by Alfred S. Taylor.—Case of Fatal Pleuritis, apparently the effect of the presence in the Right Pleura of a piece of Ivory, consisting of Four Artificial Teeth, which had been swallowed thirteen years before; by W. G. Carpenter.—Observations upon Inflammation of the Aqueous Membrane of the Eye. Read before the Physical Society of Guy's Hospital, April 2, 1842; by Joseph R. Bedford.—Observations on the Diseases of the Orifice and Valves of the Aorta; by Norman Chevers, M.D.—Case of Contracted Aorta; communicated by William Muriel, Esq. of Wickham-Market, Suffolk. Two Cases of Disease of the Larynx, requiring Laryngotomy; with Observations; by John Hilton, F.R.S.—On the Operation for Cataract: by John Morgan, F.L.S.—Observations on certain Diseases originating in Early Youth, illustrated by Cases of Defective Expansion of the Lungs. (Memoir the Second.) By George H. Barlow, M.A. and M.D.—Sequel of the Case of Lochland Shiel, who was operated on for Exostosis of the Bones of the Face, on the 1st of August, 1835.

We shall give some account of most of the preceding Papers.

I. ON PNEUMOINA. By H. M. HUGHES, M.D.

The chief object of Dr. Hughes, is to contrast pneumonia with phthisis, as regards its location, and exhibit the diagnostic importance of the latter. Dr. Hughes has been struck with the difference between the recorded experience of French authors and his own, and insists on the necessity of comparing the laws of disease in one country and under one set of circumstances, with those of the same disease in another country and other circumstances. Dr. Hughes informs us:—

"I have prepared two tables. One contains cases of pneumonia, recognised as such during life. These have been generally obtained from the books of the clinical wards, and those of the Clinical Society. This table embraces the names, age, and sex of the patient; the complexion of the individual, when stated; the lung, and the part or parts principally or primarily affected; the form of the complaint; the most important complications; the principal treatment; and the results. The other consists of an account of those cases, inspected in the hospital, in which distinct evidence of the previous existence of inflammation of the lungs was discovered after death. In some of them, pneumonia was the principal or fatal disease, but in much the larger proportion it was only a complication of other affections of a more chronic character. As these cases have been almost always derived from the inspection books, in which it is not general to introduce a detailed history of the previous disease, the distinction between

these orders of cases was not usually well marked. I have, therefore, thought it better to include the whole in one simple category of cases, in which pneumonia was merely discovered after death, and to exclude those which find a place in the other table. It may be, however, well to repeat, that, almost all the cases in this table have been instances in which pneumonia supervened upon or co-existed with other diseases. This table contains 145 cases; and embraces the name, age, and sex of the individual; the lung and part diseased; the form of the complaint and the principal disease or diseases co-existent with that which is the subject of inquiry. In collecting these materials, I have carefully examined thirty manuscript quarto volumes of inspections preserved in the Museum of the hospital."

The instances of pneumonia reported to have occurred among these cases are nearly 150. But the inspections were not sufficiently complete to permit us to place absolute dependence upon these returns. Prior to furnishing an analysis of the tables, Dr. Hughes makes some practical observations on pneumonia, as it has occurred in his own experience.

Morbid Anatomy.—Dr. Hughes believes, with Dr. Hodgkin, and, we think, with truth, that there are two kinds of grey hepatization or grey softening. "In one of these states, the grey succeeds to red hepatization: the inflammatory deposit softens down, and induces suppuration in the surrounding tissues. The other is the immediate result of inflammation in a person of feeble power or bad constitution; it is not preceded by red hepatization; but derives its peculiar soft and friable texture, and its grey or dirty white colour, from the nonplastic or unorganizable nature of the material originally deposited in the inflamed lung. The one is *usually* found to co-exist with plastic deposits; the other with seropurulent effusions in the serous membranes."

He conceives, with Drs. Addison and Hodgkin, that the primary seat of pneumonia is the membrane lining the pulmonary vesicles, and adduces severel arguments in support of his opinion. But into these we will not enter.

Is Chronic Pneumonia rare?—Dr. Hughes comments on the idea entertained by French pathologists of the extreme rarity of chronic pneumonia. "Their opinions," he observes, "on this subject are probably somewhat exaggerated in the following question proposed by Laennec—'Is there really such a disease as chronic pneumonia?'—'If,' in the words of the same celebrated author, 'we may term those cases *chronic*, in which the peripneumony, although originally acute, has been checked in its progress by blood-letting and other antiphlogistic means, or in which these antiphlogistic means have been insufficient to procure speedy resolution, or even to prevent relapses;' then I have no hesitation in saying, that, in my own experience, chronic pneumonia is not *extremely rare*. If to these cases are added those, in which masses, varying in size from a pin's head to a walnut or even a pullet's egg, of various shades of grey, red and purple, firm and dry, sometimes to such a degree as to creak under the scalpel, are found distributed in various parts of the lungs without any traces of tubercles being discovered, then I believe that, at least in London, chronic pneumonia is not even rare. But if with these may be included the cases in which dry, grey, firm, almost semi-cartilaginous consolidations are witnessed around old turbercular cavities, though these consolidations are themselves quite free from tubercular deposit—and those in which the same condition of the pulmonary tissue is found to be interspersed among, but clearly distinguishable by its hardness and dryness from masses affected with tubercular infiltration, or the more ordinary form of tubercle, then I believe that chronic pneumonia, far from being a *rare*, is a very *common* complaint."

General Symptoms.—Dr. Hughes gives a good general sketch of these, and

then dwells on some of the more prominent. Of course, the sputa claim his attention, and he describes them with accuracy. But he admits that "pneumonia is far from being universally accompanied with sputa presenting these characters: not unfrequently, they are altogether absent: more commonly, it is imperfectly mixed with the white, frothy, and moderately tenacious expectoration of acute bronchitis. In not a few cases, there is scarcely any expectoration at all, and in some there is none. The more extensive the bronchitic complication, the more copious and frothy are the sputa; and, as far as I have observed, the lower the disease—that is, the more it approaches the typhoid form of the complaint—they are the more scanty and dark-coloured. In my own experience, also, it has rarely happened that lobular pneumonia has been attended with the '*crachats rouillée*' of the French authors. The expectoration in such cases has rather presented the appearances of acute capillary bronchitis."

The pungent, stinging heat of skin, so insisted on by Dr. Addison, is also alluded to by Dr. Hughes, who insists on the frequency of its occurrence while he admits its not uncommon absence.

The trifling cough, so different from the paroxysms of bronchitis, the teasing cough of nervous disorders, or the constant hacking of phthisis, is touched on. Dr. Hughes adds:—

"Another circumstance respecting this symptom may be worthy of notice. Although the patient has asserted that he had no cough—and though none he has had, or has appeared to have, while breathing gently—yet I have never known an individual suffering from this complaint who could take a deep inspiration—i. e. not merely, after shortly inspiring, raise the shoulders by muscular effort, without at the same time elevating the ribs, as these sufferers are extremely apt to do when told to 'heave a sigh,' but really attempt to fill his chest with air—without the effort being followed by the slight double hacking to which I have referred. It appears, that so long as, under ordinary respiration, the inflamed part remains quiet, little or no cough may be induced by it; but that when, by forced inspiration, there is a tendency to dilate the diseased air-cells by the inhaled air, the cough, or rather hacking, is the almost necessary result. These observations, of course, only apply to those cases in which there is little or no complication with bronchitis. If this disease is also present, the cough will be frequent, and of a different character."

Dr. Hughes's version of the *Pulse* of pneumonia is—*frequent, contracted, and incompressible;* at the same time it is a pulse which is remarkably affected by the abstraction of blood. Under the lancet, its character is often completely changed; and even while the blood is flowing, it expands sensibly under the finger, and becomes less frequent, as well as more soft and compressible.

Physical Signs.—Dr. Hughes gives a succinct account of these. He alludes to the opinion of Dr. Stokes, that there is a stage preceding the usually admitted first one of pneumonia, characterised by "an intense puerility of respiration in the affected part," and marked by the "lung being drier than natural, with intense arterial injection, and no effusion of blood into the cells." This earliest stage, Dr. Hughes thinks is very likely, but he has never witnessed it.

Dr. Hughes is very precise in his notions of what is true crepitating rattle. His observations on this point deserve attention.

"The question is not unfrequently asked, Is the crepitating rattle pathognemonic of the first (Dr. Stokes's second stage) of pneumonia? To this question I reply, by asking, What is intended by crepitating rattle? If that which I have frequently heard so called by young auscultators—viz. a small but unequal crackling or crepitation, accompanying part of the expiration as well as a great portion of the act of inspiration—is thereby intended, then the crepitating rattle is certainly not pathognomic of that stage of the disease. If, again, a finer and more equal, but a soft and moist crepitation, heard, principally at least, at the end of the inspiratory and beginning of expiratory effort, is the sound concerning

which the inquiry is made, then the answer must be, that crepitation is not pathognomonic of pneumonia at all. The one is the muco-crepitating rattle of capillary bronchitis, which, it is true, often accompanies the disease concerning which the inquiry is made, but is not the disease itself: the other is the subcrepitating rattle of œdema and pulmonary apoplexy, which are often perfectly unconnected with it. Yet there is a crepitating rattle quite different from either of the preceding; and so peculiar, that it is only necessary once to have heard it distinctly, to be able to recognise it ever after; which, so far as my observation extends, is *perfectly pathognomonic*. This rattle, in its pure form, is, I believe, not known, or correctly appreciated, by a very large proportion of those who are in the habit of practising auscultation. On this account I shall endeavour somewhat minutely, and, as far as I am able, accurately to describe it. The sound has, by different writers, been compared to the crepitation of salt in the fire, or upon a piece of red-hot iron—to the crumpling of a dry membrane—to the noise produced by the squeezing of gauze paper—or by the separation of two sticky surfaces; but the most correct representation of it, by far, is, in my opinion, that which was, I believe, first noticed by Dr. J. C. Williams, who compares it to the delicate crackling sound caused by an individual rubbing hardly between the finger and thumb a lock of his own hair, close to his ear. This appears to me very exact. Still, the sound is not recognised. I will therefore add another illustration, though I consider it, in almost every respect, inferior to that last mentioned. When varnish which contains a great number of excessively small globules of air is spread upon a plain surface and allowed to become nearly dry, and these globules are simulataneously burst by the pressure of a soft substance, such is the crepitating rattle of the first stage of pneumonia. It appears to the ear like a multitude of exceeding minute bubbles, all of the same size, by the same effort, and nearly at the same time, bursting in thin but very tenacious fluid; or as if the parietes of the air-cells themselves were stuck together through the medium of the same fluid, and the ingress of the air caused their separation. The *rattle is very fine, very dry, very equal; of short duration; and heard only in puffs, at the end of the inspiration.* When such a rattle is heard, I believe acute pneumonia may be certainly predicated.

"I am aware, that on this, and on some other subjects connected with the disease under consideration, I differ from writers who are justly regarded as authorities in complaints of the chest: but I give the result of my own repeated observation, independently of any theory, when I say that the *pure crepitating rattle of advancing pneumonia is first heard*, and I believe only heard at the end of the inspiration; that in this particular, as well as in the much greater fineness, dryness, and equality of the sound, it differs from the muco-crepitation of capillary bronchitis; and that is to be distinguished from the subcrepitation of œdema and pulmonary apoplexy, by its comparative dryness and acuteness, and by its not accompanying the expiration.

"By the preceding observations, I by no means intend to imply that the first stage of pneumonia is always accompanied with a rattle having these characters; nor that the muco-crepitation, combined with other general symptoms and local signs, affords not often a perfectly satisfactory evidence of the existence of the complaint; but merely, that the crepitating rattle, to be pathognomonic, must possess such characters: and that when it does possess them, in my experience at least, it is thus pathognomonic."

Certainly the comparisons of auscultators are queer ones. They not unfrequently illustrate the ignotum by the ignotius, and these fine shades of crepitation, and equally fine differences of opinion about them, must sorely vex the young gentlemen and old ones who brandish stethoscopes with an imposing air, and listen to chests with a puzzled look. But *allons cultiver notre jardin*.

Dr. Hughes thinks that pneumonia is *not always* accompanied with crepitating rattle; and that crepitation does *not always* re-appear on the commencing

resolution of the disease. He does *not* "recollect ever to have known the dulness on percussion, dependent upon active and sthenic pneumonia, to disappear, and bronchial respiration to be exchanged for the vesicular murmur, in the course of twenty-four hours, as Dr. Stokes states that he has himself witnessed:" *nor* has it fallen to his lot "to have observed any of those cases, in which a tympanitic resonance on percussion, the result, as has been supposed by some, of the sudden secretion and absorption of air in and from the pleura, has rapidly appeared and disappeared during the progress of pneumonia." Of the *secretion* of air into the pleura in such cases he seems, not unnaturally in our opinion, sceptical. He asks and answers two other questions, whether satisfactorily, or not, we will not take upon us to determine. At the same time, we cannot but express our disbelief generally in the *practical* value of refined distinctions of sounds which trench so closely on each other that words are incapable of defining them. It has not happened to us to meet, in real life, with the successful application of these minute diagnostics, nay, by a singular fatality, the greatest blunders have been often made by those who have attempted them. For the sake of those, however, who think they can attain to such precision, we subjoin these questions and answers.

"Is the crepitating rattle of receding distinguishable from this of advancing pneumonia? and can the crepitation of the third stage, or of suppuration, be distinguished from either or both of the preceding?

"In answer to the first of these questions, I would say, that if a patient whose disease was just 'upon the turn,' or had just began to recede, was to be examined for the first time, I believe it would be impossible to decide, from the rattle alone, whether the complaint was advancing or retrograding; as at this time, according to my observation, the rattles are in every respect identical. Even in this case, however, the history of the disorder would probably afford some assistance; and dulness on percussion and bronchophony would contribute to indicate the existing condition of the diseased lung. But as the process of resolution goes on, the rattle becomes looser, moister, and softer: it also occupies a constantly increasing portion of the inspiration, together with the beginning of the exasperation. Under these circumstances, as I have before hinted, I believe it generally to be clearly distinguishable from that of the advancing malady.

"To the second question I would, notwithstanding the doubts expressed by M. Grisolle, answer generally in the affirmative. At the same time, I must acknowledge, as in the former instance, that if an opinion must necessarily be formed from the rattle alone in a patient who had not been seen before, there would be sufficient reason to hesitate before that opinion was delivered. Still, I believe its characters to be sufficiently marked, although it is difficult to give a correct representation of them in words. It occupies, even on its first appearance, the commencement of the exasperation as well as the end of the inspiration. It is larger and more irregular in the size of the bubbles, and, consequently in the quality of the sound, than either of those which I have previously described. In this respect, it approaches most nearly to the muco-crepitation of capillary bronchitis than the two preceding rattles: but it is more *shrill* and *resonant* than any any of them: it appears, indeed, to be what I presume it really is: viz. a muco-crepitating rattle, rendered more resonant and shrill by the superior conducting power of the solidified lung with which it is associated, in fact, a *bronchophony of muco-crepitation.*

"It resembles, more nearly than any other morbid sound with which I am acquainted, the muco-crepitation of softening tubercles, in those cases of phthisis in which there exists great consolidation of the surrounding lung, and in which, therefore, the same physical condition of the part may be instrumental in its production. If, then, to these characters of the rattle be added the continued dulness on percussion, the bronchophony, and some remains of tubular

respiration, and especially if with these are conjoined the increase, and altered qualities of the expectoration, no doubt can, I think, be legitimately entertained as to the state of the lung, even though there be no 'coincident exasperation of the general symptoms,' which M. Grisolle appears to think a *sine qua non*, but which, in my experience, is certainly not a *necessary* accompaniment of the alteration."

Dr. Hughes observes, that when pneumonia affects the apex of the lung, pectoriloquism, and, if bronchitis be present, gurgling, are sometimes so distinct as to deceive completely.

Treatment.—Dr. Hughes scouts the idea of treating all cases of pneumonia in the same way. This of course applies to the treatment of every disease as well as to that of pneumonia. Age, habit of body, causes, and circumstances, must each and all influence treatment. He points out also the danger of trusting to comparative tables of the results of treatment in acute diseases. There are too many circumstances to be taken into the account in each individual case. With this proviso Dr. Hughes thus sets forth the plan that has been for many years resorted to in Guy's Hospital. The method, then, "has been to bleed the patient to approaching syncope; and to administer a pill, containing half a grain of opium and a quarter of a grain of tartarized antimony, with one or two grains of calomel, every three, four, or six hours, according to the severity of the symptoms. With this has been usually combined a saline mixture containing twenty or thirty minims of antimonial wine. If, in the course of a few hours, or on the next day, the general symptoms have been unsubdued, or, after a temporary mitigation, have returned in their former severity, venesection has been repeated. It has sometimes, though not often, been necessary that the operation should be again and again performed. Triple venesections have been uncommon, and a fourth very rare. If the general symptoms, on the contrary, have been reduced, though the local affection has continued severe—or if the power of the patient has been materially diminished by venesection—the abstraction of blood by cupping has been ordered, to the amount of from six to twelve ounces. As a decrease of the disease has been evidenced by a diminution of the general distress or a mitigation of local suffering, the medicines have been less frequently repeated. They have been discontinued altogether when a more notable or persistent change for the better has been apparent, even though the mercury has not produced its specific effect upon the mouth. If the system has evidently become affected thereby, but the complaint has been still active, it has usually been discontinued, or repeated only in small and comparatively unfrequent doses. Blisters also have been applied with good effect, in the latter stages of the disorder."

Dr. Hughes does not doubt, nor do we, the utility of blisters, although it has been disputed.

Dr. Hughes does not seem to have tried the "contra-stimulant" administration of antimony. He has been too well satisfied with the results of the ordinary treatment, to venture to change it. But he observes:

"I must, however, confess, that the results of the treatment of pneumonia in Guy's Hospital—if all cases, however far advanced, and with whatever complications, are taken into the account—are not to be compared with what are stated to have been the really 'triumphant' effects of antimony in this severe malady. Thus Laennec says, that of sixty-two cases treated by antimony, only six died; and that of these six, two were moribund on their admission—two were old men of seventy, of whom one died from cerebral congestion—the fifth laboured under chronic pleurisy—and the sixth under disease of the heart. Others are reported to have lost only one in thirty, and one in forty cases. My own experience in, and my opportunities of observing the effects of the remedy in acute pneumonia, have, as I have already hinted, been limited. In one respect, however, my observation is entirely opposed to that of Laennec, who states that he has never

known renewed attacks of the disease to occur when antimony had effected though slight, amelioration. I well recollect, however, a case of which I p notes, treated by bleeding and tartar-emetic, in the Infirmary of Edinl while I was a pupil there, in which the patient, after two venesections, the cation of leeches, and the continued use of antimony, was so very mu lieved as to be considered almost convalescent. The antimonial solution wa ever continued. But when the disease had for four days appeared to be r decreasing and the patient was in every respect improving, the attack w newed; and it was necessary again to bleed him to the amount of ten ounces which he rapidly recovered. The same has certainly happened in several that have fallen under my notice. In some instances, also, when antimon been at first employed with benefit but relapses have taken place, it has been, appeared necessary for the cure, to administer calomel and opium in combi with it."

He relates a case illustrative of the good effects of mercurialization. Re relapses occurred, until the mouth became affected. After some further re and another case, Dr. Hughes thus sums up his opinions on the use of anti opinions with which we must say that we are disposed to concur:—"*tha* mony is a very active remedy in the treatment of pneumonia; that it is mo ticularly indicated in slight and recent cases—those complicated with bronch those in which venesection cannot be borne or repeated—and those in whicl cury cannot be safely employed: that the cases treated by it are often rapidly relieved than by any other means, but that they are also more than o rily liable to relapses; that when consolidation has obviously occurred, it not be trusted alone, but should always be given, together with mercury: t fact, though often very striking and rapid in its effects in the earlier stages complaint, it cannot be administered as a certain remedy at any time, but mo ticularly when there exists extensive solidification of the lung, unless in nation with calomel and opium."

Statistics.—The first Table furnished by Dr. Hughes refers to one hundr one cases recognised as primary pneumonia.

1. *Side affected.*

The right lung was alone diseased in	52 cases
The left lung was alone diseased in	29 ..
Both lungs were diseased in	19 ..
Side not mentioned in	1 ..
	101

2. *Parts affected.*

The base* alone of the .	Right lung . 36 Left lung . 16 Both lungs . 12	. 62	..
The whole of the . . .	Right lung . 4 Left lung . . 6 Both lungs . 2	. 12	..
The posterior alone of the	Right lung . 3 Left lung . . 4 Both lungs . 1	. 8	..
The apex alone of the .	Right lung . 4 Left lung . . 1	. 5	..

* "It is not hereby intended that the disease was in any case *strictly co* to the part mentioned, and that it did not encroach on those adjoining; but si that in the notes of the cases this is mentioned as the diseased part indica the physical signs."

Centre alone of the . .	{ Right lung . 2 / Left lung . 1 }	. 3 cases.
The parts were not mentioned in		2 ..
Various parts in one or both lungs in		9 ..
		101

3. *Both Lungs inflamed.*

In the bases of both, in	12 cases.
Generally throughout both	2 ..
In the posterior of both	1 ..
In all of one, and the apex of the other	2 ..
In the apex of the one, and the centre of the other .	1 ..
In the posterior of one, and base of the other . .	1 ..
	19

4. *Sex.*—76 cases were in males—25 in females. The latter, of course, are least exposed.

5. *Complexion.*—Seems to make little difference, for, of 42 named instances, 23 were in light complexions, 19 in dark.

6. *Age.*

Below the age of 20, in	24 cases.
Above 20, and below 30	38 ..
Above 30, and below 40	19 ..
Above 40 and below 50	8 ..
Above 50	12 ..
	101

7. *Form.*

Disease in an acute or sub-acute form, in	92 cases.
In a chronic form	8 ..
With acute gangrenous abscess	1 ..
	101

8. *Complications.*

In every case but one, in which any considerable portion of the surface of the lungs has been inflamed, pleurisy has co-existed.

Bronchitis was ascertained to co-exist in	22 cases.
Phthisis	5 ..
Influenza	4 ..
Continued fever	3 ..
Pericarditis	3 ..
Erysipelas, disease of the aorta, delirium tremens, epilepsy, hæmaturia, aneurysm, empyema, rheumatism, renal disease, simple catarrh, pertussis, and fracture—of each, one	12 ..
Cases uncomplicated, or complicated with pleurisy alone	52 ..
	101

General Results.

There were cured	70
Died	24
Were relieved, or were not reported .	7
	101

Results as connected with Treatment.

Of the cases that were considered fit for the general plan of treatment beforementioned, there were 47. In these there were 41 recoveries, and 6 deaths. Among these latter were two cases of phthisis and one of delirium tremens.

Of the cases treated without mercury (slight) seven were successful, two fatal. One of these was a case of pericarditis—one of aneurysm. Two were unsatisfactorily treated with antimony, recovered with calomel and opium.

There were *not bled* 37. Twenty recovered—13 died—the fate of four is unknown.

Results in relation to Location.

"The cases in which both lungs have been diseased were nineteen;—of whom twelve recovered, and seven died.

When the whole of one lung was diseased, of which there were ten—four of which were on the right side and six on the left—five recovered, two died, and in three the result is not mentioned.

Of the five cases in which the apex was the part alone affected, and of which four occurred in males, and one only in a female, four recovered; and one, the female, died. The respective ages of these five patients were, 31, 32, 35, 45, and 50. They thus tend to confirm the opinion of M. Louis—if that opinion is reduced to a simple statement—that pneumonia of the apex generally occurs at a more advanced age than the average age of those affected with this complaint."

The particulars in the second table "comprise the side affected—the part or parts of the lung diseased—the sex and the age of the patients—the form of the complaint, as far as it could be ascertained from the description—and the diseases with which some of the most remarkable morbid appearances were associated."

"*The Side*—

The right was alone affected, in	43	cases.
The left	40	..
Both sides were affected	60	..
The side was not mentioned	2	..
	145	

"*The Parts*—

The upper lobe was alone diseased, in	13	cases.
The centre was alone diseased, in	7	..
The posterior	4	..
The base or bases alone	49	..
The lung was universally or generally diseased in (right, 17; left, 14; both, 34)	65	..
Different parts diseased, or parts not specified.	7	..
	145	

"*Sex*—

There were of children	10	cases.
.. .. females	43	..
.. .. males	92	..
	145	

"*Age*—

There were children	10	cases.
The age was below 20, in	16	..

The age was above 20, and below 30 in	32	cases.
.. .. above 30, and below 40	23	..
.. .. above 40, and below 50	23	..
.. .. above 50	33	..
.. .. not mentioned	8	..
	145."	

"*Form*—

Recent, active, or acute	30	cases.
Old, passive, or chronic	63	..
Lobular (among which were specified) { acute . . 5 / chronic . 3 / purulent . 3 }	28	..
Purulent or suppurative, inclusive of two defined abscesses	13	..
Gangrenous, inclusive of three defined abscesses	11	..
	145."	

Complications

Suppuration of the lung existed in combination with:—

"1. (Abscess) Stricture of the urethra.
2. Ossification of the pericardium.
3. (Abscess) Fever and suppuration of the neck around the thyroid gland.
4. Fever, and hydrocephalus.
5. Fever, bronchitis, and pleuritis.
6. Fever, arachnitis, and phlebitis.
7. None mentioned.
8. Disease of the colon.
9. Fever and arachnitis.
10. (Abscess) Malignant disease, and pericarditis.
11. Fracture of the leg, followed by suppuration.
12. Malignant disease of the tongue.
13. Osteo-sarcoma, amputation, and phlebitis.

"Gangrene of the lung was found in combination with the following diseases:—

1. Empyema, and epilepsy.
2. Peritonitis, from extra-uterine fœtation.
3. Suppuration of the scalp, and secondary syphilis.]
4. Diabetes, and pleuritis.
5. Malignant disease of the œsophagus.
6. Empyema of the opposite side, and fractured ribs.
7. None mentioned.
8. Fever, and phthisis.
9. Fracture of the leg, and pleuritis.
10 Stricture of the œsophagus.
11. Diseased kidneys, and pleuritis."

Dr. Hughes concludes by the following important practical deduction:—

"That while, according to my own researches, pneumonia is double in nineteen ases per cent., phthisis affects both lungs more or less in ninety cases per cent.—at while pneumonia was *confined* to the base of one, or bases of both lungs, in xty-two cases per cent., tubercles were *confined* to the base of the organ in only te case out of two hundred and fifty;—and that while the upper part of the lung as principally, primarily, or solely affected with tubercular deposit in ninety-four ases out of every hundred, pneumonia was confined to the same part in only five ases in the hundred."

These facts bear directly and powerfully upon diagnosis.

II. ON HÆMORRHAGE, OCCURRING AFTER DELIVERY, AND COMPLICATED WITH DISEASE OF THE SPLEEN AND KIDNEYS.

Mr. Lever first relates three cases of enlargement of the spleen, attended with hæmorrhage after delivery, and then draws the following general conclusions:—

"1st. That in females affected with enlargement or disease of the spleen the uterus is predisposed to dilate, and therefore admits of the effusion of blood into its cavity.

"2ndly. That the blood so collected, coagulates, and excites considerable constitutional irritation, as marked by the accession of rigors, fever, &c.

"3rdly. That the fever so produced in course of time, (varying in different cases) assumes the intermittent type, especially when the patients have previously suffered from ague. And,

"4thly. That such intermittent fever is cureable by the same remedies as are successful in the treatment of pure and uncomplicated ague."

Mr. Lever then relates two cases in which the morbus Brightii was accompanied with considerable hæmorrhage after delivery, and infers,

"1st. That labour occurring in patients affected with morbus Brightii is generally lingering.

"2ndly. That in such patients, although the fœtus and its secundines may be expelled by the natural uterine efforts, and the uterus may for a time appear to contract, yet that is very liable to become relaxed, and distended with blood.

"3rdly. That in patients so affected, peritonitis of a more or less acute character is prone to occur."

III. NOTE ON THE MICROSCOPIC GLOBULES FOUND IN URINE. By GOLDING BIRD, M.D., &c.

Microscopical examinations of the urine often detects minute globular bodies, which may be mistaken for particles of pus. To prevent the occurrence of such an error, Dr. Bird has favoured the profession with a brief account of these globules.

"1. *The true pus particle*, roughly granular on its surface, and evidently compound in its structure, becoming reduced on the addition of ammonia, to a mucous mass, readily miscible with water; in which, however, the particles may be discovered, apparently shrivelled. On the addition of a drop of acetic acid to a drop of purulent urine, and examining the mixture with the microscope, the particles will be found to be disintegrated and partially dissolved, leaving numerous minute transparent circular bodies, which have been regarded as the nuclei of the original particles: these are free from granulations on their surface, and about one-fourth the size of a blood-disc, or $\frac{1}{800}$ inch in diameter; the urine containing any appreciable quantity of pus *being albuminous, and becoming opaque on the application of heat.*"

"2. *The true mucous globule*, generally rather smaller than the pus-particle, being about $\frac{1}{2000}$ inch in diameter, appearing circular, with a smooth well-defined edge under a low magnifying power, but becoming distinctly granular on the surface with a power of 250 diameters; so closely resembling the pus-particle, that it is scarcely possible to distinguish them, except from the fact of the granulations on the surface being fewer and less distinct, not being readily miscible with water, and presenting merely a less shrivelled appearance on the addition of ammonia. These globules are often found cohering together, forming

a kind of imperfect structure; and in this state they are met with in the mucous cloud which forms in all healthy urine by repose."

3. *The large organic globule.*—Of frequent occurrence, "varying in size from $\frac{1}{600}$ to $\frac{3}{1000}$ inch in diameter, with great difficulty distinguished from the pus-globule: these seldom, if ever, constitute a deposit, but are found free and floating in the urine. They are generally scattered, and often few in number; frequently not more than a dozen being visible at one time in the field of the microscope. They are not, perhaps, so evidently compound in their character as the pus-globule, but on the addition of acetic acid, become broken up, and leave minute transparent single globules, like those left by pus when similarly treated. This variety is probably identical with what has been described as muco-pus."

4. *The small organic globule.*—"They are apparently perfectly simple in their structure, and absolutely spherical, so that they are seen to roll over each other on the slightest motion of the microscope: they are free from granulations on their surface; are seldom so large as a blood-disc, being generally about $\frac{1}{3000}$ inch in diameter. They mix with water with the utmost readiness, and undergo no change whatever, save, perhaps, becoming more transparent by boiling for seven minutes in strong acetic acid. These globules often form a glistening white deposit at the bottom of the capsule in which the urine has been allowed to cool, after being gently heated; and in this state closely resemble, to the naked eye, the oxalate-of-lime deposit.

Of these globules, "the first," says Dr. Bird, appears to be "essentially connected with an albuminous state of the urine; as, in all cases hitherto examined, the pus-particle is never secreted in the animal economy without the constant accompaniment of a drop of serum in which it floats, just as the blood-disc does in liquor sanguinis. The diagnosis founded on the presence of the pus-particle in the urine will, of course, vary with its probable source. The second, or true *mucous globule*, is found in all urine which has been allowed to repose for a short time, so as to allow the cloud diffused through it to become deposited."

If the mucous membrane of the urinary passages is irritable, these globules increase in quantity. If, besides, there is diuresis, or a frequent desire to pass urine, the mucous globule is replaced by the third species.

The *large organic globule* is found in abundance in the urine of pregnant women, especially during the latter months, and when there is a frequent desire to empty the bladder: it exists, also in every case of ardor urinæ that Dr. Bird has examined, though not necessarily connected with any evidence of irritable bladder. Dr. Bird relates some cases in point. These globules, too, are almost invariably present in the morbus Brightii; and these, on account of the albuminous character of the urine, are distinguished with difficulty from the pus-particle: a comparison of them, however, with a specimen of the latter, will generally render the difference tolerably evident. In several cases of malignant disease of the womb this globule has been found abundantly in the urine."

Of the *small organic globule*, Dr. Bird has met with only two instances. In each its appearance was fugitive, and both were those of menstruating women. "These globules much resemble in appearance the minute amylaceous particles met with in vegetable juices; they are about the size, and resemble in transparency and spherical figure, the transparent nuclei obtained by treating the pus-particle, or large organic globule, with acetic acid. Is it improbable that such may be their true nature?"

The *milk globule* Dr. Bird has never seen in urine, unless it has been added by the patient. The *ferment globule* is a secondary thing, frequent in diabetic urine that has been passed for some days, never found in it when recent.

IV.—CASE OF FATAL PLEURITIS, APPARENTLY THE EFFECT OF THE PRESENCE IN THE RIGHT PLEURA OF A PIECE OF IVORY, CONSISTING OF FOUR ARTIFICIAL TEETH, WHICH HAD BEEN SWALLOWED THIRTEEN YEARS BEFORE. By W. G. CARPENTER.

Mr. H. was afflicted from childhood with asthmatic bronchitis: and it appears that several branches of his family have fallen victims to pleuritic, pulmonic, or tracheal affections. About eight years ago, he became assistant to Mr. Watts, Chemist, in the Edgeware-road, with whom he subsequently lived. Last Winter, when Mr. Carpenter first knew him, he was never free from fever. The symptoms increased in the Spring, and on the 13th of April last, Mr. C. was called to him, as he had been attacked with pain in the side and chest, which had that evening become so acute as to render coughing, speaking, and breathing, almost impossible. The respiration was short and hurried; pulse 140, rather wiry; skin hot and dry; tongue furred at the base and margin, red in the centre; bowels confined; cough troublesome. On the right side the anterior and posterior part of the chest was dull on percussion and the respiratory sound was not audible: there was no dulness on the left side, and the respiratory murmur was loud, and accompanied with mucous rattle.

Mr. Carpenter bled him to eight ounces, and gave calomel, antimony, and colocynth. The blood was cupped and buffed, and the symptoms not being materially relieved, the venæsection was repeated, with calomel, antimony, and Dover's powder every four hours, and salines with squill and digitalis. Cupping and blistering succeeded the bleeding. But the pyrexia continued, with profuse perspirations, and pain in the side; whilst the Report of the 16th states "there is still dulness on percussion, and absence of respiratory murmur; in fact, not the least sound, whether healthy or morbid, is heard in the side: there is a slight external fulness over the posterior part of the ninth rib, which is œdematous to to the touch."

Dr. Bright now saw the patient, and gave it as his opinion that there was pleuritic inflammation, with, probably, effusion. What was done, is of little moment, as no improvement resulted, and death took place rather suddenly, on the 19th.

Examination of the Body.—"The lower part of the right side of the chest still appeared prominent, and its surface œdematous: the pectoral muscles on this side were undergoing decomposition, whilst those on the left were sound. As soon as I passed the scalpel into the right pleura, a gush of very offensive gas escaped. The pleural cavity on this side contained five pints of sero-purulent fluid. The lung was collapsed, and flatly pressed against the bodies of the vertebræ; the pleura which covered it, as well as that of the parietes, was thickly coated with coagulable lymph, which peeled off in layers. On the outer surface of the lung was an old fistulous opening, large enough to admit the tip of my little finger: when cut into, the lung appeared to contain a number of tubercles, some of which had suppurated. Some of the bronchial rings were ossified. The left lung was emphysematous; it contained a number of small miliary tubercles: the lesser bronchial tubes were filled with mucous: the pleura on this side appeared quite healthy. The heart and pericardium were also healthy. The liver was large, and easily gave way when rubbed between the fingers: its under surface very dark: the gall-bladder contained very little bile.

"After I had completed the examination, I was removing the remaining fluid and coagula of blood that had escaped from the pulmonary vessels to replace the lung, when I came to an irregular substance, which, when examined, turned out to be, to our great astonishment, a piece of ivory worked into four artificial front teeth, covered with a brownish crust, with a pointed piece of silver rivetted into the upper part of the teeth, which had evidently assisted in fixing them to the upper

jaw; the base of the silver rivet surrounded with wadding. At each extremity there are two holes, which no doubt once contained the wire that fixed this mass of false teeth to the adjoining sound ones."

The circumstances of this curious case were elicited from the father of Mr. H and from Dr. Kelk, of Scarborough.

The patient had swallowed the teeth thirteen years before, in a fit of coughing

"From Dr. Kelk's statement, which was likewise corroborated by that of Mr. Eccles of Brompton, near Scarborough, at that time a fellow apprentice of Mr. I———, it does not appear that his sufferings were materially increased after the accident, or that he was unable to attend as usual to business. The morning after it happened, he mentioned the circumstance to Mr. Champley, his master, who advised him to take an aperient, supposing the teeth had passed into the stomach; it was thought that the teeth had passed away by the bowels, unnoticed;—and then the circumstance gradually became forgotten. He had been subject from a child to asthmatic bronchitis, which, perhaps, from the constant efforts at breathing, had dilated the air-passages, and, with the coating of mucous that no doubt existed, might have rendered the parts somewhat insensible."

Mr. Carpenter observes:—"I again examined the œsophagus; and we were satisfied that there was neither a recent wound nor a cicatrix to be found; and the only opening through which it could have escaped into the pleura of the right thoracic cavity, where I found it, must have been the fistulous one in the corresponding lung."

"The piece of ivory no doubt gradually made its way, by suppuration, through the lung; after its escape, the passage became obliterated, leaving merely the outer orifice, for I could not pass the probe through any distinct channel: this adhesion might have taken place after the escape of the air, when the lung became collapsed. It is a strange thing that no hæmorrhage ever took place; though there must have been some sharp points about the teeth, one of which is still remaining."

V. OBSERVATIONS UPON INFLAMMATION OF THE AQUEOUS MEMBRANE OF THE EYE. By JOSEPH R. BEDFORD.

After some introductory observations, Mr. Bedford observes:—

"Inflammation, then, of the aqueous membrane appears to be essentially marked by the appearance of a general or partial, more or less intense, opalescence, and which, as might be expected, may have its origin in the corneal, scleral, or capsular portions; when, in the former, the greatest facility for diagnosis is afforded. As each portion is differently circumstanced, it is necessary to speak of them separately. When the corneal is affected, it may be throughout, or in circumscribed patches, and most frequently in the inferior half;—and here the surgeon must be careful not to confound it with corneitis or corneal conjunctivitis. The points of diagnosis are these: An opalescence being observable, we must examine the cornea in different directions; a smoothness of its surface and clear reflection of light will at once exclude the conjunctival covering from any participation: a second inspection also in different lights, will inform us that the opacity is deeply seated, and posterior to the corneal lamellæ; and if the disease be in its advanced stage, certain peculiar white spots, of which I shall speak more hereafter, will appear, and which may be considered as pathognomonic: although in corneitis—more especially, indeed, I believe I may say, only when chronic—the appearance is somewhat similar, consisting of a number of insulated opaque points, but which are less symmetrical, and more irregular in shape and disposition, than when a similar condition of the aqueous membrane is present, and the greater superficiality of which an experienced eye

will soon detect. In noting, however, this deep-seated cloudiness, it must not be forgotten, that an opaque condition of the aqueous humour is incidental to advanced age, and that rare cases have been recorded by Clemens and Rosas of the same appearance being produced by a sudden suppression of the mammary secretion."

There can be little doubt that many cases of reputed iritis are merely inflammation of the aqueous membrane covering the iris. Mr. Bedford makes a good many observations on the point, which conclude, like the last chapter of Rasselas, without any thing being concluded. In fact it does seem to us that, for every thing like utility, it is just the difference between tweedledum and tweedledee, whether the iris, or a membrane so indissolubly united to it that both separation and demonstration are impossible, be *the* part affected.

The results of aquo-capsulitis appear to be,—1. *Increased secretion.* 2. *Effusion of lymph.* 3. *Puriform effusion.* 4. *Ulceration.* The disease seldom lasts long without producing one or other of these.

1. *Increased Secretion.*—This is the least frequent termination. There is a considerable increase of the distance between the cornea and iris; the latter assuming a concave appearance; the former appearing less convex, seeming, indeed, in its outline, to form a segment of the ocular, rather than one of a smaller circle. A tensive pain is produced, and some circum-orbital. There may, seemingly, be presbyopia *or* myopia. Mr. Bedford speaks thus of the treatment. He recommends "cupping to the amount of a few ounces; the administration of calomel, combined with rhubarb, antimony, or opium, according to the indications: blisters are also useful; colchicum has been strongly advised. Wardrop placed much value upon the evacuation of the aqueous humour: but this, although a palliative measure, has its disadvantages, and seems only absolutely necessary under two circumstances: 1. Where the distention of the cornea is so extreme as to threaten its health. 2. Where agonizing pain exists. But this evacuation, to be effectual, must be repeated daily; and even then is often useless. Rosas recommends that a small portion of cornea be actually removed. If the affection be of a strumous character, we must be regulated in our treatment by general principles, and prescribe, instead of the before-advised, alterative mercurials and tonics. It may be observed, that remedies useful in abdominal effusions are quite valueless here."

2. *Effusion of Lymph.*—This comprehends "all cases of morbid adhesion of the iris, either to the cornea or lenticular capsule: and this I believe to be the form with which we must connect the spotted or mottled appearance of the membrane; these spots appear actually to depend upon the presence of minute portions of lymph, either on its free or attached surface. They are distinctly visible, very circular, and uniformly diffused. Several authors, indeed, believe that these appearances owe their existence to an extension of inflammation to the proper substance of the cornea; but opposed to this is the fact, that they have been observed by Mr. Tyrrell on the iris: and, in a case related by Mackenzie, appeared and disappeared in the course of a few hours:—a circumstance difficult to account for, if their locality were in the cornea, a structure in which absorption is not rapid. In the least severe form the effusion exists in mere shreds, or as a fine false membrane."

3. *Puriform Effusion.*—Mr. Bedford *thinks* that pus *is* secreted by the aqueous membrane independently of ulceration.

"I have seen," he says, "one or two cases where, during the existence of hypopion, something very like a stream of pus was traceable from puriform points extending down to the hypopion. We do not in this form, at all events after the commencement, perceive the general opalescence before described, but

simply a small number of isolated spots, more puriform in appearance, irregular in form, and less numerous, than those developed in the second form of the disease, and which have been described as conferring a mottled appearance. When they are once existent, I am not prepared to say whether they disappear in one part and appear in another; but I think, in the few cases which I have seen, they have, when once formed, been persistent until the termination of the disease. The spots may be more or less in number, possessing an intense opacity, which is gradually shaded off all round, until it subsides into the almost healthy clearness of the cornea. These appear to be only occasionally present.

"The colour of the effusion, which is frequently a bright yellow,—its consistence, which is permanently fluid;—its continuing for some time freely moveable with every motion of the head,—its lying, moreover, for many days, I might almost say weeks, on the floor of the chamber, in contact both with the corneal and iridal membranes without any adhesion taking place, which would probably be the consequence of adhesive matter being so situated,—are strong proofs of purulent character. And I am satisfied that I have observed cases presenting these conditions, where the existence of the pus could neither be attributed to the suppuration of a lymph tubercle effused from the parenchyma of the iris, nor to the irruption into the anterior chamber of the contents of a corneal abscess; such effusion necessarily being the unassisted product of the membrane. Reasoning analogically, I need not observe, that, under certain circumstances, a serous membrane may pour out pus, or at least a very puriform fluid. The chief difficulty, however, seems to be the fact of its easy absorption. Now that these effusions, claiming the title of hypopion, and presenting the appearances I have described as characteristic of pus, are removed, there is no doubt; and if their removal be effected solely by the solvent properties of the aqueous humour, still the globules of pus must eventually enter the absorbent system."

4. *Ulceration.*—Of this Mr. Bedford does no more than announce the fact, and refer to Mr. Tyrrell for description. He winds up with the following summary:—

1. "Aquo-capsulitis may be simple or strumous—acute or chronic.

2. "Slight opalescence, or cloudiness of the membrane, is the essential mark of inflammation; and this is dependent upon no morbid deposition, but simply vascular turgescence, constituting inflammation, in a transparent structure.

3. "The peculiar spotted appearance of the membrane, depending probably on deposition of lymph, or insulated points of purulent effusion, together with turbidity of aqueous humour, is indicative of a more intense degree of inflammation.

4. "Aquo-capsulitis may terminate in increased secretion, fibrinous, and puriform effusion, and ulceration.

5. "Increased secretion, constituting dropsy of anterior chamber, is distinguishable by certain well-marked objective and subjective symptoms. Such a condition is not necessarily fatal to vision, and may, by certain modes of treatment, be relieved. Evacuation of aqueous humour, although a palliative measure, and deserving to be made use of when great suffering exists, is yet accompanied with many disadvantages, and, as far as a radical cure is concerned, is of very doubtful value.

6. "Fibrinous effusion is, in the first stage, amenable to simple remedies, and, when more advanced, yields to moderate mercurial action.

7. "Puriform effusion probably exists as an occasional result of simple inflammation, but less frequently so than fibrinous, that, when it exists to a great extent, evacuation may be resorted to with advantage, but that, in a great majority of cases, its removal is effected by absorption, and chiefly through the agency of those curative means which may be proper for the particular ophthalmia in which it occurs.

8. "And lastly, that, of all results, ulceration is the least frequent."

VI.—OBSERVATIONS ON THE DISEASES OF THE ORIFICE AND VALVES OF THE AORTA. By NORMAN CHEVERS, M.D.

Dr. Chevers informs us that he has "long been in the habit of examining the orifice and valves of the aorta, whether diseased or otherwise, in every case that has come under my notice; comparing the condition of these parts with concomitant states of other portions of the vascular system; and, as far as possible, remarking the relation between their appearances and the symptoms which were noticed during life." He has been led to form conclusions opposed to views at present generally received.

Dilatation of the Aortic Orifice.—Dr. Chevers points out the necessity of an acquaintance with the fact, that the normal dimensions of the aorta differ just above and just below the sigmoid valves. In eight healthy aortæ, "the mean circumference of the canal immediately below the valves was 36¼ lines; that precisely above, 34 lines. But upon traction being made (after separating the vessel from the heart,) the latter portion was found to be dilatable to 43 lines, the former only to 39½; proving, that while the lower part of the ostium is the wider, the upper is by far the more dilatable."

The lower portion of the orifice is almost entirely destitute of elasticity, and when the heart is flaccid can scarcely be stretched to more than three lines beyond its usual circumference by any sudden force less than sufficient to cause rupture of the part. Yet it is liable to great permanent enlargement in obstructed states of the arterial circulation, and, probably, the circumstance that the fibres here are chiefly parallel to the axis of the vessel prevents the opening regaining its proper dimensions.

The superior portion of the orifice is very elastic and dilatable. Yet it is very prone to permanent dilatation, and the dilatability of the vessel would seem to be generally lessened in nearly exact proportion to its increased diameter.

"*Dilatation of the lower portion of the orifice* becomes developed to a greater or less extent in nearly all cases of eccentric hypertrophy, or active aneurysm of the left ventricle. It is also a very frequent accompaniment of simple dilatation of that cavity; but its occurrence in such cases is not invariable." "The most common immediate cause of dilatation of this part of the vessel is, either thickening and contraction of the aorta above or behind the valves, or disease of the sygmoid crescents themselves interfering with the free emptying of the ventricle. In the latter case (providing the valves have not become so rigid as to prevent the impulse of the ventricle from being transmitted to the contents of the artery) there is usually observed a simply narrow condition of the upper part of the ostium and remainder of the aorta."

Dilatation of the Superior Part of the Ostium.—This "usually results from obstruction existing either in the main trunk, or in some of the terminal branches of the aorta. It is generally found in cases of thoracic and abdominal aneurysm; in stricture of the descending arch, where the ductus arteriosus is closed; in association with extensive ossification of the smaller arteries; and in the subjects of chronic, renal, and hepatic disease."

It is only when the vessels between the heart and the impediment have become stretched to the utmost that the ventricle begins to suffer dilatation. Previously to the occurrence of this, "there is dilatation of the superior part of the orifice, with a smaller state of the inferior, but not with actual contraction of this part: for it appears, that when the left ventricle first has the task of propelling the blood through obstructed arteries, its walls are apt to become greatly thickened, but its cavity retains, for a considerable time, nearly its original size." Aneurysmal conditions of the arteries of the limbs and of the abdominl aorta are

usually attended with far more hypertrophy of the left ventricle, and with a smaller size of the inferior part of the ostium, than are similar states of the arch and descending thoracic trunk of the vessel.

Equal widening of the Superior and Inferior Portions of the Orifice mostly occurs only in a class of extreme cases, when the disease is verging towards a fatal termination. Then, "the cavity of the left ventricle is usually found very capacious, but its walls still remain considerably thickened: the aorta has become immensely and irregularly widened, and almost entirely inelastic, from the presence of extensive layers of bone and atheroma; proving that the arterial disease has been of very long standing. Coincident with this state, more or less contraction or retroversion of a portion, or the whole of the sygmoid curtains is usually observed—conditions which must, of course, have permitted reflux of blood through the widened orifice. But it is an interesting fact, that the whole of the orifice may become dilated to the utmost extent without the valves failing to perform their office, providing that, during the vicissitudes of the disease, their structures have not suffered any material lesion; for (the elastic tissue of which they are composed being capable, like most other parts of the vascular apparatus, of undergoing great extension under pressure gradually applied) they become widened and deepened in proportion as the dilatation of the aorta is increased."

When the valves are contracted and thickened and inefficient, the disease is much accelerated, the patient becoming liable to die with suffocative symptoms, from failure of the heart's action, or obstruction to the pulmonary circulation.

"Where the upper portion of the aortic ostium is more dilated than the lower, the most usual condition of the valves is, either great lengthening of their marginal cords, or depression of their superior points of attachment, with shallowing of the pouches, and rounding, or, occasionally, more or less retroversion of their free borders.

"Still, it is perfectly demonstrable, that so long as the inferior part of the orifice retains its proper dimensions, dilatation of its superior portion may go on to a very great extent without being attended by regurgitation through the valves, providing these curtains have not become retroverted, or suffered laceration. For I have observed, that, in such cases, a singular natural adaptation of the parts comes into play, to obviate this ill consequence: the upper margins of the sygmoid curtains having been stretched laterally, their crescents, even though rendered rather shallower than natural, will still perform their valvular office; as, having lost their usual horizontal position, they bag down into the still undilated opening of the lower part of the ostium, and, their edges there coming into opposition, the vessel is perfectly closed against the reflux of blood into the ventricle."

He thinks *atrophy of the semilunar valves* exceedingly rare. "Under ordinary states," he remarks, "of the circulation, every portion of the valvular apparatus of the great artery is put in motion at each contraction of the left ventricle; and, whether the quantity of blood thrown into the artery be scanty or excessive, all parts of the curtains must be put more or less upon the stretch, as often as the elastic force of the aorta presses the fluid downwards into the sinuses of Morgagni: hence, portions of the valves can scarcely have an opportunity of becoming wasted from inaction. On the other hand, the common diseases of the endocardium and interior of the aorta, whether arising from undue pressure of the blood, friction, inflammation, or any other of the usual causes of lesion, are mostly attended with thickening of the parts from depositions of lymph between the laminæ of their fibrous structures; and, while this change may be followed by defective nourishment of the tissues—as marked by softening, friability and loss of elasticity, producing a tendency to ulceration or rupture—these cannot

be fairly looked upon as the states to which the term 'atrophy' is conven applied.

"Circumscribed dilatations of the valves of the heart have been attrib atrophy of their elastic tissues; but, although dependent upon a loss of c and resilient power in the diseased structures, these changes are commo ceded and accompanied by an opaque, thickened, and tumid state of th branes, and never, so far as I have seen, by any degree of wasting, until of surface have begun to be removed by an ulcerative process. I have ne with a state of the aortic valves which appeared to me to be fairly attribu simple atrophy of their structures."

The not unfrequent appearance of small perforations near the upper p attachment both of the aortic and pulmonary valves, which has been attri atrophy, Dr. Chevers believes to be congenital, depending merely upon an a development in the curtains during an early period of intra-uterine life. briform state of the sigmoids may be observed in the hearts of very young c He has noticed it three times in examining the aortæ of children about fo old, in the remaining portions of whose circulating systems no trace of les discovered; and he once remarked it in one of the aortic valves of an inf died at, or shortly after, birth.

Vegetations.

Dr. Chevers is of opinion that the minute semi-transparent warty veg so frequently met with on the endocardium and aorta, are not mere dep fibrin on inflamed or abraded parts of the surface. "The unvarying an metrical form which these little bodies always present, their complete l in with the serous membrane, and the fact (which I lately happened to o of their assuming a deep-yellow hue in jaundice, seem to give strong e in favour of their being duly organized growths sprouting from the surfa not mere adventitious deposits from the blood, of accidental formation. they have always appeared to me to be intented to retard, in various wa progress of diseased actions in the parts upon which they appear. Th are commonly found existing, in the form of narrow fringes, upon the a edge of the mitral orifice, where this opening has undergone the state of commonly known as 'button-hole contraction,' and upon the most project tions of the aortic sygmoids,—parts more exposed than any other to attri injury during the vicissitudes attending active diseases of the left ventricle here seem to be intended to protect the entrance and outlet of the ventri attrition, and from the almost invariable consequence of this action (w duly exercised upon any particular part of the lining of the vascular syste deposition of clots:—for I think it will be uniformly observed, that the bodies never receive any coagulum or other adherent deposit upon their su their minute elastic papillæ are sufficiently pliable to offer scarcely any ment to the passage of the blood; but it is evident that massive coagula around the orifice of a contracted mitral valve would greatly increase the ment and hasten the disease to a fatal termination: the same obtains with to the aortic valves, which, as we have already seen, are frequently liable formation of clots below their surfaces of contact. Lastly, it is proba they prevent the occurrence of adhesion between opposed surfaces of the In contraction of the aortic and mitral orifices, there is often a great tend adhesion between portions of the curtains of the former, and to coalition of tremities of the slit-like aperture which the latter usually forms; but it is obs that, closely as these vegetations are often placed to each other, they never s each arises from its own foot-stalk, immediately in contact with, but p distinct from, those around it; and the smooth-pointed apices of all ap admit of being continually brought roughly into contact with each other, displaying the least tendency to adhesive inflammation."

raction of the Aortic Orifice.—Dr. Chevers gives a good account of this change. He observes that partial constriction may occur in three situ- -below, above, or within the valvular curtains. All tend, sooner or later, ıce dilatation of the left ventricle.

The part of the orifice immediately below the valves is probably less fre- the seat of marked organic lesions than any other portion of the aortic still it is liable to become generally rigid and contracted from inflammatory ; and one portion of its compass—the upper part of the larger mitral cur- ıich is attached to the bases of two of the aortic valves—is occasionally oated with masses of fibrinous and other deposit: this layer of fibrous e is also apt to become hardened, and rather contracted, after attacks of ditis, and in cases of disease affecting the left auriculo-ventricular orifice; way forming a cause of narrowing of the lower part of the aortic ostium, believe to be frequently overlooked."

The portion of the artery immediately above the valves is occasionally arrounded by a complete raised zone of tough, semicartilaginous deposit, ıbserous tissue: this may occur without being attended with the slightest ıt disease of the upper part of the vessel." If this deposit ossifies, it forms ıment obstruction to the canal; if not, Dr. C. suspects that dilatation of the art of the orifice is gradually produced.

Lastly, the valves themselves may either have become adherent at portions : edges, or have suffered extreme thickening from the conversion of nearly ɔle of their curtains into rigid masses of calcareous substance—conditions in their degrees, are both equally productive of impediment to the passage ɔlood from the ventricle."

ıch cases, Dr. C. has seen the aorta much dilated, with very thin walls—a ɔn due, he thinks, to stagnation and accumulation of the blood in it.

e mouth of the aorta may be contracted from birth, either owing to its having become blended with each other, so as to present a mere funnel- tube, with a slit at the apex through which the blood passes with difficulty; the whole of the vessel being merely below the ordinary size, as is some- he case where free communication has continued to exist between the pul- artery and the aorta. In no case has the aorta been found quite imper- earer to the heart than immediately distal to the left subclavian artery; but stricture, and complete obliteration of the canal at this spot, or immediately he ductus arteriosus, have occurred in many instances."

Chevers observes that "there are several classes of cases, occurring in s of various ages between the commencement of puberty and the decline of which, exclusively of any evidence of disease in its tissues, the whole of tic trunk, with its appendages, is found unusually small; often with coinci- orbid narrowness of the left auriculo-ventricular orifice, lung-obstructions, idences of retardation of the blood in the right cavities of the heart, or in the nd abdominal viscera."

usual explanation has been that the small size of the aorta has led to these l congestions, by the plethora of the venous system. But Dr. Chevers be- with Dr. Barlow that the aortic diminutiveness has been the cause, not the ıence. Dr. C. states that this aortic narrowness may be occasioned by any ɔn of the thoracic viscera, or parts immediately covering the heart, which ompletely to embarrass or fetter the action of that organ, and he enumerates ıant disease of the lungs, large collections of serum or pus in the pericar- r in the pleural cavities, various diseases of the anterior mediastinum, and ex- ɔ distention of the abdomen from ascites or hydatid disease, pushing up the ıgm, and diminishing the cavity of the chest; but complete adhesion of the dium is, if not the most common, by far the most characteristic cause that ɔe cited."

Chevers alludes to the common opinion that adhesions of the pericardium

gives rise to hypertrophy and dilatation of the heart. He disputes this, and that such enlargement occurs unless there has been also valvular disease. He confidently states that, during the last seven years, no case of decided hypertrophy with dilatation of the heart, occurring in combination with long-standing obliteration of the pericardial cavity, has been inspected at Guy's Hospital, in which there was not also present, either morbid narrowing of the aortic or mitral orifice, or some evident cause of obstruction to the pulmonary or sytemic arteries —causes fully sufficient in themselves to produce enlargement of the heart's cavities in each case, quite independently of the adherent state of the pericardium.

2. *Diminution of the Aorta may result from any Obstinate Impediment to the Pulmonary Circulation.*

In chronic disease of the bronchial tubes Dr. C. has often found that, with more or less engorgement, dilatation, or thickening of the right cavities of the heart, there has been very perceptible diminution of the left ventricle and the aorta. Besides these, there are other cases "in which some permanent obstruction to the free passage of blood through the lungs having existed for many years, or perhaps almost from birth, in the form of thoracic or spinal malformation, or inadequate development of the pulmonary apparatus itself, the left cavities of the heart and the aorta have a tendency to remain considerably below the ordinary dimensions, from never having been called upon to perform their part in the circulation with vigour and freedom."

3. *Morbid Contraction of the Left Auriculo-ventricular Orifice has a tendency to be followed by Diminution in the Capacity of the Aorta and Left Ventricle.*

Dr. Chevers observes that there are three conditions which, with contraction of the left aurico-ventricular orifice, the ventricle and aorta may assume.

1. "Where the patient's constitution is good, his muscular system firm, and the arterial circulation free, the cavity of the left ventricle becomes lessened in capacity in proportion to the degree of contraction in the mitral orifice, and the aorta undergoes remarkable diminution in calibre throughout the whole of its course. In these cases, the muscular tissue of the ventricle is generally firm and powerful; and the whole adaptation is evidently designed to enable the cavity to propel the blood in small quantities at a time, but with more than usual rapidity."

2. "But when in such a case as the last, the obstruction behind the ventricle, or any other cause has produced œdema, ascites, or congestive or organic visceral disease, the arterial circulation becomes impeded, and the aorta suffers dilatation; the cavity of the ventricle remaining small, until the artery has dilated to its utmost, and then the muscular walls of the cavity begin to yield."

3. "Where, as not unfrequently happens in these cases, the walls of the ventricle have previously become weakened, either from constitutional or local causes, the occurrence of any action tending to impede the arterial current is not succeeded, at first, by widening of the aorta, but the enfeebled ventricle undergoes dilatation passively, not appearing to have sufficient force at command to enlarge the artery. In such cases we occasionally find the left ventricle enormously dilated, without proportionate thickening of its walls, the whole of the orifice and canal of the aorta remaining narrow."

4. *Any condition which greatly diminishes the quantity of the blood circulating through the system. Several states of this description might be noticed; but perhaps the two most characteristic, are, Malignant Disease, and Pulmonary Consumption.*

"I have usually remarked, that where death has occurred, either during the earlier stages of general malignant disease of the viscera, or where the fatal

mischief has been confined to the extremities, or surface of the trunk; or, again, where it has been circumscribed in its extent, as in carcinoma of the mammary gland, stomach, uterus, or bowel, the heart and its appendages have been found small, with a dry shrivelled aspect, and an appearance of having shrunk from their ordinary dimensions."

The same fact appears to have been noticed by Louis.

"But this condition of the heart and its vessels is liable to become reversed in more general and advanced forms of malignant disease, and especially in cases of extensive hæmatoid deposits in the lungs or abdominal viscera, where softening has occurred. In such instances, I have found the cavities of one or both sides of the heart, with their arteries, the aorta more especially, dilated and thickened in various degrees; the latter vessel not unfrequently presenting traces of recent disease in its lining and subserous tissue. These changes appear to be traceable to the difficulty which the heart has experienced in propelling its contents through the vessels of the obstructed organs, owing to the diseased and often impervious condition of the capillaries which enter the softened masses."

Several authorities have taken notice of the diminution of the size of the heart and its vessels in phthisis. But usually the diminution of the left ventricle is the most remarkable. "In proportion to its narrowed cavity, the walls of the ventricle are often of remarkable thickness and strength; and though permitting the entrance of an extremely small quantity of blood at each diastole, its contractions are performed with a degree of activity and force which appears to prevent the aorta from becoming greatly diminished from inaction."

The Paper is a very valuable one.

VII.—On the Operation for Cataract. By John Morgan, F.L.S.

Mr. Morgan introduces to our notice a modification of the operation for Depression of the Cataract, recommended to him by Mr. C. C. Egerton, Medical Superintendent of the Eye Infirmary at Calcutta. It would seem to be very successful, the cataract having little tendency to rise again. The operation is thus described:—

"The pupillary artery having been dilated by the application of belladonna to the eyebrow, the patient is to be placed as in cases of operation for depression, the eye to be operated upon being towards the light, and the head of the patient fixed by an assistant opposite to the breast of the operator, and against his own. I always prefer the sitting to the recumbent posture, except in operations for extraction, as there is an advantage gained by seeing down into the globe as you depress the lens to its destination. The needle which I use is extremely fine, of the same thickness from the point to the handle; cutting at the point, but not at the sides, and hardly longer than the diameter of the globe. In all operations on the eye, I invariably use a very short needle; which is, in my opinion, much more convenient than one of the usual length. The point of the instrument is now to be passed through the sclerotic, at the distance of rather more than a line from its junction with the cornea, and just below its transverse diameter: it is then to be carried, with a slight inclination forwards, directly through the central substance of the cataract, completely transfixing the lens. This part of the operation requires a good deal of careful management: the object will be to disturb surrounding parts as little as possible, by transfixing the lens *in situ*; and this is to be effected, not by pushing the point of the needle at once directly onwards, but by carefully drilling its way through the opaque body by rotating the handle of the instrument as it is held between the thumb and fore-finger, while the point at the same time is gently urged onwards. Having thus insured complete transfixion by drilling, the first step of the operation is accomplished; and it will be seen that the second can now be performed with the greatest ease and

precision—I mean the dislocation and depression of the lens, which must of necessity follow the exact course of the point of the instrument by which it is impaled; and as the needle has been introduced below its transverse diameter, it will be *pulled*, instead of *pushed* down, and thus be effectually prevented turning on its axis into the vitreous humour as it is descending—an occurrence which will sometimes take place during the operation as at present performed, and which, for obvious reasons, it is desirable to guard against. Another advantage gained by transfixion is, that all chance of injuring the retina by the pressure of the lens, either from its slipping from the point of the instrument during the operation, or from its having been unconsciously left resting on that membrane after its completion, all danger of amaurosis from such causes, is removed; for we have such perfect command over the opaque body, that we can determine to the greatest nicety the exact course it will take in its descent, as well as the precise situation in which it will be left after the needle is withdrawn. The course should be so directed, that the anterior surface of the lens passes hardly a line distant from the corpus ciliare and retina, taking a curved sweep as it descends, corresponding with the concave curvature of the interior of the globe; and it should be left as nearly as possible with its upper circumference a line below the lower edge of the widely-dilated pupil. Very great care is required in disentangling the instrument from the cataract as it is being withdrawn from the globe; and this should be done by drilling the needle *out* from the depressed lens as it lies, without changing the direction of the handle of the instrument till it has been liberated in the same manner as it has been drilled *in* while the lens was *in situ*; for by neglecting this precaution, the lens will follow the point of the instrument, and be either raised again or forcibly dragged against the retina as the instrument is drilled out. Should any portion of an opaque capsule remain in the pupillary aperture after depression, it should be brought into the anterior chamber, if possible, with the point of the needle, before it is withdrawn from the globe, and after it has been disentangled from the lens. But I would recommend caution in cutting up a *posterior* capsule, lest the cells of the vitreous humour should be broken down in doing so: for, as I have already stated, I consider the preservation of their integrity very essential to the *success* of an operation for depression."

ON THE RADICAL CURE OF VARICOCELE. By A. VIDAL, (DE CASSIS.)*

M. Vidal begins by stating that he has always been averse to operations on the veins. This aversion was inspired by a principle of operative medicine which is too often lost sight of, viz.—*No operation, attended with danger, ought ever to be performed, except for severe lesions incompatible with life.* For this reason, M. Vidal was in the habit of refusing to operate for varicocele; this, however, he no longer does, and for the following reasons.

1. M. Vidal's position as surgeon of the Hôpital du Midi has enabled him to see that varicocele is by no means a disease of old people, but that it frequently arises in early youth, and rarely begins after the age of thirty. This circumstance of the youth of the patients afflicted with varicocele, establishes a fundamental distinction between these kinds of varices, and those which accompany old age. From this pathological, ought to spring a therapeutic distinction. It would be right to run more risk in an operation to remove an infirmity in a youth who would otherwise have to support it during the course of a long life,

* Annales de la Chirurgie, Sept. 1842.

than in an old man, accustomed to his burden, and part of whose existence it may be said to form.

2. Varicocele is not merely a source of inconvenience, it may be extremely painful, and prevent the least exercise, and may thus render existence a burden to the rich man, and prevent the poor man from gaining a livelihood. Moreover, it is in youth especially that varicocele is attended with most suffering.

3. It is necessary to take into account also, the moral torture which is frequently, worse than the physical pain; thus youths of high rank in society will frequently entreat most vehemently to be relieved of the disease by extirpation. The sterility with which many men with varicocele are affected, is also a powerful motive for performing the operation.

4. A new argument in favour of the operation, and which distinguishes varicocele from other varices, is the absence of the varicose diathesis in the greater number of instances.

It is rare to meet with enlarged veins of the legs, with piles, or other varicose affections combined with varicocele. Observation tends to prove that varicocele in youth is a consequence of abuse in the genital organs, of masturbation, or other excessive excitations of the testicle. Thus the cause is local, and consequently the operation is much more applicable, and relapse less to be feared. In these cases not unfrequently the affection takes a highly acute form, thus a case is related, in which a youth of nineteen, who had indulged in excessive venery from the age of thirteen, had a very large varicocele developed rapidly after the occurrence of gonorrhœa with swelled testicle.

5. A still more powerful argument is the want of risk in the operation as now modified. M. Reynaud, of Toulon, practised this operation hundreds of times, without observing any serious accident. As a proof, M. Vidal adduces the following case. A youth had varicocele; the operation was performed; every thing goes off well. He then requests to be operated on for phymosis, and this operation, which is one of the most simple, produces phlebitis, and mortification of the skin of the scrotum. Thus a ligature of the veins succeeds, whilst a simple incision of the prepuce is attended with the most grave results.

The operation, as practised by M. Reynaud, was as follows. The operator seizes with both hands the diseased spermatic cord, seeks for and separates the vas deferens; then pinching up the scrotum with the fore-finger and thumb of the left hand, so as to embrace the spermatic vessels and nerves, he pierces the fold thus formed, at its base, with a curved needle armed with a waxed thread. The scrotum being let go, exhibits an interval of about an inch between the points of entrance and exit of the instrument; the two extremities of the thread are then brought together, and the ligature of the parts comprised in the loop which it forms, is conveniently tied upon a thick cylinder of linen, which is to be interposed between the knot and the skin. It is necessary to tie the ligature in such a way as to enable you easily to undo it, and loosen it in case the compression of the parts should be too great. Some simple dressing is to be applied to the punctures, and a light compress applied over the whole.

In a short time some inflammation is developed in the parts touched by the thread and embraced by the ligature, but it is usually of short duration, and allows, in two or three days after the operation, of the ligature being tightened upon a new cylinder of lint, as the first is stained by the suppuration which begins to be established. If, however, the inflammation should extend, and the pain be great, the ligature must be loosened, and no fresh constriction employed until, by the application of emollient cataplasms, this state of inflammation has been subdued, which will certainly be the case in the course of two or three days.

In proportion as the soft parts are divided before the thread which presses on them, and as they cicatrise behind at the same time, the ligature is tightened occasionally, and this is not difficult, if care has been taken in tying the ligature in

the first instance. From the fifteenth to the eighteenth day, the vessels and nerves of the testis, as well as the tunics which envelope them, are divided, and the skin alone remains; M. Reynaud then, in order to leave no doubt as to the complete division of the vessels of the cord, introduces a blunt-pointed bistoury, and divides the portion of skin which the ligature had left.

A simple wound remains, and this rapidly cicatrises, so that at the end of twenty-five days from the commencement of the operation, the cure is usually complete.

The modifications of the above-described operation which M. Vidal has adopted, consists in employing, instead of an ordinary thread, a silver wire, of about the thickness of a fine pin. This metallic thread allows of the ligature being tightened or loosened, without undoing the knot. After being fastened over the cylinder of linen as before, it can easily be twisted so as to allow of any degree of compression. Instead of a curved needle, M. Vidal employs a straight one, as being more convenient, and in place of cutting the skin which remains between the two punctures, he withdraws the thread as soon as the vessels are completely divided.

When there is any fear of a relapse, instead of a single thread, two may be passed, at a distance from each other of about two inches. The upper one alone is to be tied; the other, the one nearest the testicle, is left loose; this is the ligature "*d'attente.*" This ought to be kept in as long as possible, as, if, after the first ligature has divided the veins, when the patient begins to walk about, any tendency to a relapse is observed, the second thread may then be tightened, and a radical cure ensured.

The author adduces two cases in proof of the success of this operation.

Not content, however, with employing the ligature in the above-mentioned cases, M. Vidal intends to employ this method of proceeding in cases of incurable tumours of the testicles and other parts similarly situated. Thus if the ligature does not produce a definitive cure of the tumour, it may check its further progress, and if it be a "*degenerescence,*" may prevent its propagation to other parts. In every case, it may be preparatory to an extirpation, giving a greater chance of success to this last operation. It will then be necessary to tie not merely the veins, but the whole cord, vas deferens, spermatic artery and nerves, *tout compris.* The success attending the ligatures which he has already attempted, makes M. Vidal presage as satisfactory a result for the ligature "*en masse*"

With regard to this form of operation, however, the author owns that he has as yet had only two cases with any success, one already published, and another which will be published hereafter. When a person has only two facts on which to rest a new doctrine on the treatment of tumours, M. Vidal thinks it as well to speak with some reserve! (With this last observation we cordially agree.)

Spirit of the British and American Periodicals.

DR. MUTTER ON CICATRICES RESULTING FROM BURNS.*

Few subjects in surgery have excited more interest than the peculiarities of cicatrices resulting from burns, and the plan of treatment by which the deformities they occasion may be either alleviated or entirely removed. In pursuing this investigation it is necessary to direct our attention to several points.

1*st. The Nature of the Tissue to be divided or removed.*—Although the "*tissue of the cicatrix*," as it is termed by Dupuytren, always presents certain peculiarities distinguishing it from any healthy or natural structure, it yet exhibits modifications induced either by the *cause* or the *tissue* involved. The cicatrix of a burn, for example, can always be distinguished from that caused by sharp instruments; and again, both these from those resulting from cancer, ulcers, syphilis, &c. The cicatrix of an ulcer in mucous membrane, differs, too, from one taking place in the skin.

Nearly all formations of this tissue, however, when dissected, present much the same structure. We have, in the first place, a *delicate cuticle*, which may be detached by vesication or maceration. Beneath this inorganic tissue is a dense stratum composed of strong fibres, which cross each other at different angles, and are firmly bonded together. This is the true "tissue of the cicatrix" of Dupuytren, and the "inodular tissue" of Delpech, beneath which and the cuticle there is no deposit, as a general rule, of rete mucosum; hence the whiteness of cicatrices in the African. It contains no hair bulbs, nor sebaceous follicles, at least when the lesion is profound, and although furnished with both nerves and blood-vessels, is usually less perfectly organized than the parts whose loss it supplies.

Lying under this tissue, we find a dense laminated structure composed of the original cellular substance, which binds down the cicatrix, and offers in many cases the chief obstacle to the success of our operations. This is especially the case in severe burns: and whenever such adhesions exist, we must anticipate and be prepared for, most extensive dissection, if an operation be attempted.

Another difficulty occasionally, but very rarely, presents itself in cases dependent upon burns—namely, the vascularity of the cicatrix. Whenever this tissue is red, sensitive, soft, and moveable, we may fear hæmorrhage; and this condition will, therefore, always render our prognosis, so far as loss of blood is concerned, more unfavourable than when the parts are pale, firm, inelastic, and adherent.

2. *The Thickness or Profundity of the Cicatrix.*—When the integument merely is involved, the cicatrix is for the most part elevated, thrown into bands, moveable and soft, the fascia beneath not being contracted. The motions of the subacent parts are also normal, and hence, although the deformity may be considerable, the positive inconvenience is comparatively slight. In such a case the prognosis is favourable, and the operation required, much less severe than under other circumstances. When, on the other hand, not only the integument, but the superficial fascia, cellular tissue, and muscles are attached, the inodular tissue is irregular, dense, thrown into hard ridges, immoveable or nearly so, and the parts which it unites are displaced, or, as in the case of openings and cavities,

* American Journal of Medical Sciences, July, 1842.

obliterated, the prognosis is very unfavourable, and the operation required extensive and severe. This condition must not be confounded with that contraction of the fascia superficialis sometimes accompanying cutaneous burns, but often the result of other causes, many of which are inappreciable.

3. *Location of Cicatrix.*—The location of the cicatrices will also modify the prognosis and treatment. When vital or highly organized regions are involved, great caution must be exercised before attempting an operation, and when such a procedure is deemed advisable, the patient should be warned of the probable risk. In deep cicatrices of such parts, there is less of danger of hæmorrhage than would be imagined, because the blood vessels, especially the veins in the vicinity, are obliterated and converted into fibrous cords.

4. *Extent of Cicatrix.*—The wider and more extensive this is, the more difficult will it be to effect its removal. And we are hardly justified in the performance of an operation, unless we feel certain of obtaining a less deformed cicatrix than the one we wish to remove.

Dupuytren gives some very excellent advice relative to extensive operations on [illegible] between the arms and thorax, or thigh and pelvis, are to be divided, he cautions us not to complete the operation at once, but to proceed by fractions, and let the wound of one operation heal, before we attempt another. In this way we avoid the dangerous consequences which would follow so large a wound as would be requisite to separate the parts at once.

Another good rule is, to be certain, before attempting any operation, that the limb retained in a faulty position is not incapable of being brought into a better one: if anchylosis, alterations of articular surfaces, or atrophy of the member is present, no operation should be attempted.

5. *Age of Cicatrix.*—Dupuytren advises "that no operation should be attempted until several months or even years have elapsed since the healing of the wound." He believes that we run great risk of exciting inflammation and ulceration in the part, and moreover, that inasmach as the *disposition of the cicatrix to contract*, is not lost for a long period after its complete formation, we do no good by an operation which may indeed excite in this disposition a new energy. The older, then, the cicatrix, according to him, the better, so far as an operation is concerned. This advice is at variance with that of some other surgeons, but it is nevertheless as a general rule the safest to adopt. This is especially the case where the inodular tissue is superficial, and curable by simple incisions, followed by extension and pressure sufficient to keep the edges of the wound separate from each other. Of course, if the cicatrix is so situated as to interfere with the comfort and convenience of the patient, it may be proper to deviate from this rule, and operate as soon as possible.

6. *Peculiar Deformity of Cicatrix.*—The power with which these cicatrices contract is well known, but is sometimes overlooked in the desire for an operation. Mr. Earle has known it sufficient to bring the shoulders towards one another by a partial absorption of the clavicles. Cruveilhier mentions a case in which the carpus was luxated from the radius by a cicatrix on the back of the hand; and many other deformities might easily be cited. In these cases, of course, no ordinary operation would prove of any service.

When, therefore, the original shape and function of a part have been destroyed, we should never operate, unless there is a prospect at least of removing the deformity. There are cases in which we must be content with this, while the loss of the function is an evil for which there is no remedy.

Diversified as are the deformities from burns, Dupuytren is of opinion that they may all be referred to five classes:—

1. Those in which the cicatrix is too narrow.
2. Those in which it is too prominent.
3. Those in which it has formed extensive adhesions.
4. Those in which a cavity has been obliterated.
5. Those in which an organ or organs have been destroyed.

Operations.—It must be obvious that as the cicatrices present a great variety of shapes, occupy different positions, and penetrate to different depths, the operations for their removal must be modified to suit the case.

1. *Narrow Cicatrix—Incision.*—Suppose, for instance, the deformity to consist in the formation of a narrow band of inodular tissue, what operation is most likely to relieve it? Some surgeons recommend *incision of the band*, as performed by the ancients, whilst others tell us that it is almost, if not altogether, useless; and what is worse, that it even increases the difficulty, each incision in cicatrizing, shortening the band more and more. The latter view, though in the main correct, is not absolutely true, for entire relief has, in many cases, been obtained by means of incision and pressure. Much depends on the duration of the case, and the depth to which the cicatrix extends. If of long standing and sufficiently deep to involve the fascia superficialis, the probability is, that the operation will fail, owing to the contraction of the muscles which thus acquire a new sphere of action, and to the adhesions of the fascia. In recent and superficial cicatrices, however, the plan will answer, and in its execution there are three indications to be observed.

1. The incisions are to be made at several points, and completely through the tissue; a scalpel or bistoury is the instrument to be employed.
2. The parts are then to be separated from each other, and placed at once, if supple and yielding, in their natural position; if rigid, a slow and gradual extension is to be kept up by splints and bandages until our end is accomplished.
3. Extension must be kept up for some time after the completion of the cicatrix, and if new fascia or bands form, they must be divided.

2. *Prominent Cicatrix—Excision.*—When the cicatrix is too prominent, there is rarely any unnatural contraction of the parts beneath, the elevation being almost entirely confined to the skin, and, consequently, all the operations in use are limited in their extent to this tissue. The one most to be relied on is that proposed by Dupuytren, in which there are three things to be observed.

1. The projecting point is to be sliced off on a level with the skin.
2. The edges of the wound are to be kept apart by appropriate machinery.
3. The surface of the wound is to be frequently cauterized with argent. nit., so as to keep it rather below the level of the integuments.

3. *Extensive Adhesions.*—When the deformity consists in adhesions by which parts are approximated that should remain separated, or others separated that should remain in contact, numerous operations have been proposed.

Dupuytren's practice was as follows:—

After having divided the adhesions, he dissected them freely to beyond their origin. He then drew the parts asunder, and maintained methodical and constant pressure on the point whence the cicatrix must proceed, which is always at the angle of the union of the parts.

This plan succeeds in some cases, but very often fails.

Another operation consists in cutting out the cicatrix, and bringing the edges of the wound together, so as to cover the raw surface from which the cicatrix was removed; and then extending the part by splints and bandages, and keeping

them in this condition while cicatrization is going on, and for some weeks afterwards.

By this plan the contraction takes place in a lateral direction, and not in the long axis of the part operated on, and the cicatrix is soft, linear, moveable, and as extensible as natural integument. Whenever practicable, this operation is probably as good as any that can be devised, but in some cases it is impracticable.

Dr. Mütter has succeeded by slightly modifying this operation in curing a very extensive cicatrix, involving the arm and fore-arm, by which the whole member was rendered useless. After cutting out the cicatrix, he found it impossible to draw the edges of the wound over the raw surface; it then occurred to him that the only method by which success could be secured would be that which he had frequently resorted to in the operation for cleft palate, when there was difficulty in approximating the edges of the cleft, and which consisted in making *lateral incisions* at some some distance from the edges of the the tissue to be displaced. In doing this, and then drawing the edges of the original wound together, the raw surface could be completely covered; then dressing the two lateral wounds with warm-water dressing, made them unite by granulation. The operation succeeded perfectly, and may be had recourse to in many similar cases.

Another plan, the principle of which was clearly recognised by Celsus, which Dr. Mütter has tried in extensive cicatrices about the the neck, without, however, deriving much benefit from its employment, consists in making an incision through the integuments at some distance from the origin of the cicatrix, in other words, in perfectly sound skin; in dissecting up the skin and cicatrix as far as possible, without making any new incisions in the skin itself; and then separating the divided parts, so that the cicatrix slides from its original position, leaving a raw surface to heal on granulation.

The operation is severe, and though sometimes useful, is not much to be relied on in cases of extensive contraction.

The operation which, of all others, Dr. Mütter considers as most entitled to confidence, especially in cases of cicatrices of the neck, cheek, eyelids, nose, and lip, is that in which "autoplasty" is brought into service. In all such operations we are governed by the same principles, and pretty much the same mechanical details.

They consist in dividing the cicatrix, so as to produce a raw surface in some part of its extent, or else cutting it out entirely; in applying to this raw surface a piece of healthy skin taken from the neighbouring parts; in attaching this skin by suture to the margins of the wound in which it is inserted; in approximating the edges of the wound from which the skin has been removed: in separating, by appropriate agents, the parts too closely approximated, and keeping them in this condition, some time after the flap has united. and in applying oleaginous frictions and motion to the new made parts to give them flexibility and softness.

Many shocking deformities from burns have been relieved by the performance of operations conducted on this principle; for example, the eyelids, the cheek, the nose, and the lip, have all been restored, but Dr. Mütter claims the merit of having first performed an operation of this kind for the relief of extensive cicatrices of the throat.

In very extensive cicatrices of the neck, it may be well to modify the operation so as to take a flap from each side, by which means the risk of a very large single flap will be avoided.

4. *Cicatrices complicated with Obliteration of Cavities.*—Where the cicatrix produce partial or complete obliteration of a natural opening, as the mouth,

&c. incision of the angles, and the introduction of tents larger than the natural opening, will occasionally do good, but for the most part all such attempts fail, and it becomes necessary to perform the operation recommended by Dieffenbach.

5. *Cicatrices complicated with Loss of Organs.*—Where organs are entirely destroyed, nothing short of a "plastic operation," the aim of which will be the construction of an organ as much as possible like the original, offers the slightest prospect of benefit to the patient.

Observations on Pericarditis and Endocarditis, and on the best Mode of Treatment in these Diseases. By E. O. Hocken, M.D. &c.

The main features of this Paper may be condensed into the following propositions:—

1. That the heart is always exempt in gonorrhœal rheumatism. 2. That, in the atmospheric form, it suffers only in the articular variety, but that no stage of the rheumatism, especially where the synovial membranes are unaffected, should be considered too early for minute and frequent investigation of the cardiac region by the stethoscope, as heart-disease sometimes precedes the more obvious symptoms, nor should any period short of complete recovery be thought too late to search for, rather than be surprised with their outbreak. 3. That as the heart suffers in the proportion of one-half or one-third of the cases of acute articular rheumatism, and as these diseases almost invariably lay the foundation of future disease and future death, although rarely proving immediately fatal, that it is the bounden duty of the practitioner constantly and carefully to watch for and search after the signs which lead us to diagnose their very commencement; since all our experience tends to prove that these diseases are never *cured* unless stopped *at once*. 4. That there are auscultatory signs which precede the formation of a bruit, and the to and fro sound of friction, as trustworthy and as diagnostic, when occurring de novo, as could be a loud bellow's murmur, or a bruit de scie. 5. That these stethoscopic signs stand in the following order:—1st. An increased and abrupt impulse of the heart. 2nd. An increased frequency in the actions of the heart. 3rd. A lengthening and roughening of the sounds of the heart, chiefly or entirely marked in the first sound. 4th. A diminution of the diastolic period, chiefly marked in the period of repose. 5th. The commencement of a distinct bruit. 6th. A roughening of the to and fro motions of the heart, without a distinct bruit de frottement. 7th. That the stethoscopic signs are combined with a thrill or vibratory impulse in the pulse. 8th. That more general symptoms are most deceptive guides, at the same time that one symptom, when present, is very characteristic and one of the earliest indications of any implication of the heart, viz. the peculiar expression of anxiety which the countenance so generally betrays, and which is foreign to the mere course of the rheumatism. 9th. That the inflammation seems to commence in, and to be principally confined to, the true fibrous tissues, secondarily involving the serous membranes in contact with them. 10th. That when a bruit de frottement is fully formed it never terminates but in complete adhesion of the roughened surfaces, or in the death of the patient—probably depending upon the quantity of solid lymph thrown out in these cases. 11th. That when diagnosed and treated even at the commencement of a bruit and friction sounds, the future prognosis is very unfavourable. Watson, Latham, &c. all concur that, under these circumstances, a large proportion will seem to recover, but that the recovery is so far unreal that it involves the germs of future destruction. 12th.

That every case of acute articular rheumatism, especially when the synovial membranes are free from implication, and the disease is erratic, threatens imminent peril to the well-being of the heart, and on this account should always be treated in expectancy of such an occurrence. 13th. That this treatment should consist of moderate venesection, avoiding all risk of shocking the system—calomel, in doses of ten or twenty grains, mainly with the object of its peculiar action as a purge, every twelve hours, to the fourth or fifth dose, with half a grain of opium, followed, if necessary, by some castor oil—subsequently calomel in smaller doses, keeping the system so far under its influence, that we can rapidly produce soreness of the gums when we will it by modifying the dose, and yet so far from it that all the symptoms of salivation are absent, only the constitution is on the point of their production.—one or two grains of opium twice or thrice a day. 14th. That on the occurrence of the first stethoscopic signs of heart-disease, blood should be drawn to the amount each case may suggest, avoiding syncope, and the calomel increased, so as to produce moderate salivation, *as soon as possible*, viz. one-grain doses with one-eighth of opium every hour.—*Lond. and Edin. Monthly Journ. of Med. Science.*—Sept. 1842.

DR. METTAUER'S CASE OF ARTIFICIAL PENIS.*

Mr. ———, æt. about 19 years, of good general health, though much depressed in mind by the mortifying deformity under which he laboured, came under the Dr.'s care in the Autumn of 1841. His penis was greatly elongated, measuring eight inches from the scrotum to the extremity of the glans in the non-erected state. The anterior three-fifths, much dilated laterally, with great expansion of the corresponding portion of the urethra, was perfectly flaccid and non-erectile. The urethra in this part was capable of containing two ounces of fluid, and the cavity which it formed was bounded anteriorly by the concave glans; posteriorly by the rough granular surface of the pubic two-fifths, or stump of the organ; and laterally by walls formed of the urethra greatly dilated, the elastic ligament, and the integuments. The pubic portion, or stump, constituted two-fifths of the penis, was well-formed, capable of erection, and terminated abruptly, so as to form the pubic extremity of the cavity already described, with the orifice of the urethra projecting from its surface so as to form a kind of os tincæ looking into that cavity. Low down in the perineum, about ten lines anterior to the verge of the anus, was a small orifice by which the greater part of the urine escaped. The urethra about eight lines in extent anterior to this orifice was nearly impervious, and transmitted only a few drops of urine during micturition. On the central part of the expanded, pouch-like portion of the urethra, there existed at this time a fistulous opening, which had been formed artificially, and through which a few drops of urine would occasionally appear. From the meatus, a muco-purulent discharge frequently escaped, especially when the urine was forced to take that direction.

Notwithstanding this deformity, strong sexual desires existed. The testes were perfectly formed, and of large size. Dr. Mettauer being of opinion that it was practicable to correct the deformity, so far, at least, as to place the organ in a condition favourable for sexual intercourse, the following plan was adopted, and, as the sequel will show, it occasioned the perfect correction of the malformation.

The first aim was to transplant the glans upon the erectile stump. To accomplish this, the pouch was laid open in its whole extent by an incision along the rapheal line. A belt was then removed from the interior of the cavity seven lines

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* American Journal of Medical Sciences. July, 1842.

in width entirely round the base of the glans, and quite to that organ, so as to leave that part of the wall of the pouch to consist only of integument and cellular membrane. A like belt was removed from the inferior portion of the pouch, quite down to the circumference of the face of the erectile stump, which was then carefully denuded in every part of it. After the blood had been carefully sponged away, the glans was placed with great care upon the face of the stump, taking caré that the denuded margin at its base should exactly correspond with the circumference of the opposed surface of the stump. A short bougie was then passed into the meatus, and carried along the urethra of the stump, nearly to the contracted portion of it, in order more easily to retain the glans in its proper position. Thus arranged, the glans was firmly connected to the erectile stump by eight points of the glover's suture, taking care that ample space between them was allowed for the free passage of blood to the glans. When the sutures were tightened, they fixed the glans most perfectly and securely on the erectile stump, and imparted to the organ, thus modified, an improved condition highly gratifying!

This procedure necessarily shortened the penis, and required that the tegumentary intermedium which had been left, should be inflected upon itself, so as to form a loop-like body on the dorsal and lateral portions of the organ immediately behind the glans. This was unavoidable in order to supply the glans with a sufficiency of blood for its nutriment, but to remedy as much as possible the inconveniences which it occasioned, about one half of the band which it formed, was removed by the scissors, taking care not to disturb the sutures.

Little inflammation followed the operation, and by the third day free suppuration was established throughout all of the ununited cut and denuded parts. At the end of the twelfth day the glans was found to have united firmly to the stump, the margins of the intermedium, however, did not heal over until the twentieth day, and fully three months elapsed from the date of this operation before all inflammatory tenderness of the parts involved had subsided.

It was then resolved to remove the unsightly fold of integument left for the support of the gland, which was accomplished by first rapidly excising the parts with a strong pair of scissors down to the depth of their union, and then cautiously dissecting away the remaining portion, taking care to leave no more integument than would suffice to render the organ comely. As soon as the superfluous textures were dissected away, the margins of the skin were carefully approximated, and retained by sutures. At the end of a fortnight, the sutures were cut away, and the part found to be firmly united and well.

The penis now presented a very natural appearance, and was fully two inches in length during the non-erected state, measuring from the scrotum. The glans, too, which had lost its sensibility from the moment the intermediate skin between it and the stump was divided, had in some slight degree at this period recovered its feeling, and manifested a decided erectile blush, and some expansion from friction. In the erected state, the penis measured nearly four inches and a half in length, and presented in all respects a most natural appearance.

Several months elapsed before it was deemed prudent to attempt any operation for restoring the urethra to its pervious and proper condition, as well as for closing the opening in the perinæum. At the end of this time, all things being favourable, the operation was performed in the following manner.

A curved probe was passed into the perineal opening, with the point firmly pressed in the direction of the glans into the cul-de-sac at the termination of the inferior urethra, which was intrusted to an assistant to be held steady. A long trochar was then introduced into the meatus, and carried quite down through the anterior or superior urethra to its cul-de-sac, with the concavity to the symphysis, and the lancet retracted within the canula, held and directed with the right hand. The blunt extremity of the canula was now pressed firmly into the bottom of the cul-de-sac, and after giving it the proper direction, the lancet was projected from

its concealment about five lines, and immediately retracted within the canula. The canula was now pressed onwards so as to fill the part incised quite to the bottom, and the lancet again projected, and in this manner the operation was repeated, until the extremity of the canula entered the inferior portion of the urethra. The trochar was then withdrawn, and a gum catheter of proper size introduced into the bladder.

The opening in the perineum, from its external margin down to the tube, was then touched with lunar caustic, and the eschars carefully scraped off with a small delicate scalpel, so as to expose a new denuded surface; the opening was then closed with two points of the interrupted suture, inserted from within outwardly down to the tube, and fully eight lines from the margins. Directions were given that the bladder should be evacuated every second or third hour, to guard as far as possible against the passage of urine around the tube: an accident which might occur in the event of a large accumulation of water in the bladder taking place.

In this situation the case was suffered to remain for five days, at the end of which period the tube was carefully removed, and the parts found to be in a most favourable condition for a speedy and perfect cure. The urethra suppurated freely, but not too much so, and the margins of the perineal opening seemed firmly united. A fresh tube was introduced and kept in the passage for three days more; after this it was only introduced during urination, to prevent, if possible, any stress from the flow of water along the urethra upon the newly-closed perineal opening. On the twelfth day the sutures were cut away and the margins of the opening found to be firmly and perfectly united.

The patient was advised to introduce a bougie along the newly-formed passage, at least once a day for a year, and after that period to employ it occasionally to prevent the contraction.

The urethra was now free from all tenderness, and transmitted the urine from the bladder in a bold and full stream.

Thus modified, there is little doubt but that the penis will prove useful for all purposes, and compensate the patient for the pain and suffering he endured from the different operations performed for his relief.

Miscellanies.

MESMERIC AMPUTATION.

ON Tuesday, the 22d November, a great gun was fired in the Royal Medico-Chirurgical Society, which was expected to demolish the whole tribe of sceptics who have opposed the occult arts of mesmeric necromancy, for some time past. Dr. Elliotson headed the corps, which was a very numerous one—(some forty mesmeric disciples having got into the camp as visiters)—and he had generals, captains, civil engineers, barristers, chirurgeons, and others, *minoris notæ* in his train. Of the prudence which guided the counsel in admitting the paper in question, we will say nothing. Sir B. Brodie and others condemned it; and, at the beginning, we were of the same opinion; but, before the evening was over, we were satisfied that "all was for the best." The cause was opened by Counsellor Topham, who somewhat triumphantly observed that, as the paper contained nothing but authentic and incontrovertible *facts*, he would not make a single comment, nor offer a word of explanation.

The facts of the case were shortly these. A labouring man suffered for five years from disease of the knee-joint, ending in ulceration of the cartilages. He had continued to work, though in great pain, and with increasing emaciation, till he was received into the "*district hospital at Willow, near Ollerton Notts.*"* It was not till the 9th September, that Mr. Topham saw him, and then commenced the mesmeric processes, which he continued daily, with more or less effect in setting the sufferer to sleep Mr. Ward, the surgeon, was absent for most part of the time between the above date and the 1st or 2d October, the day of operation. Mr. Topham, the Counsellor, had the patient, therefore, all to himself, and there can be little doubt that he *counselled* him to some purpose. Be that as it may, on the 1st of October the mesmeriser, after exhibiting a *quantum suf.* of the unknown influence, threw the patient into a profound coma, and took the precaution to keep his own fingers on the patient's eyelids during the amputation, which was performed by Mr. Ward. "*Soon after the second incision, a moaning was heard from the patient, which continued at intervals until the conclusion.*" "It gave me the idea of a troubled dream." When the operation was over, the man seemed a little bewildered, and then exclaimed—"*I bless the Lord to find it's all over.*" How did he know this, if he were in a profound state of insensibility all the time? When questioned, he observed that he felt no pain, but once "*felt as if he heard a kind of crunching,*"—evidently the sawing of the bone. The man is recovering.

Mr. Ward's part of the account adds little to Counsellor Topham's, and is corroborative of the lawyer's statement. But the surgeon lets out one or two particulars of a most unfortunate nature, which in the discussion at the Society afterwards, turned the Great Gun against the gunners themselves. Mr. Ward observes that "the extreme quivering or rapid action of the divided muscular fibres *was less than usual.*" And again, "*I touched the divided end of the sciatic nerve, without any increase of the low moaning.*" Ah! Mr. Ward, we fear you have not studied the "*reflex function*" under our friend Marshall Hall, or you would never have marked the above passage in *Italics!!* But more of that anon. What now is the amount of all these *facts*, which were to silence the Society and the profession? The whole amounted to this miserable *non sequitur*—this "lame and impotent conclusion"—that *non-expression* of pain is a proof of its *non-existence!!* Is it not humiliating to medical science that a barrister, a physician, and one or two surgeons, should come forth in a learned and royal society to uphold such a piece of ratiocination as the above in the present day. Mr. Alcock, Dr. Johnson, and others exposed its fallacy, while Sir B. Brodie and others showed that nothing was more common than patients undergoing the most painful operations, without wincing, without saying a word, or *evincing* the slightest feeling of pain. But would any man, who had an ounce of brain, or an atom of reason, believe that these patients had no *sensation* of pain at the time? Certainly not. They felt the pain; but they had command over their feelings, and betrayed no sensation of agony at the moment.

The mesmeric party cut a remarkably poor figure, and looked not a little foolish when Dr. M. Hall rose, and said that the operation in question proved a great deal too much; for unless the Notts farmer was constituted in a different manner from all other animals, the instant the sciatic nerve of the amputated limb was touched—even if the patient had been previously decapitated, (which must have induced a tolerable degree of coma), the other extremity, which lay motionless, would have kicked most manfully! This experiment, therefore, he asserted, proved beyond the possibility of a doubt, that the quiescence of the man, under the operation, was a voluntary effort of the will controlling the feel-

* What are the nature and extent of "Willow District Hospital?" We only know that Willow is a small *parish* of some four or five hundred inhabitants.

ings of suffering. Beaten at all points, the Leader of the forlorn hope was obliged to fall back on the mesmeric sleep, so often induced by the Barrister, and the improvement of the man's health during the time he was being daily mesmerized at the hospital. That the pokings and pawings, the strokings and clawings of the necromancer should have often set the poor ignorant peasant asleep, or apparently asleep, we do not deny—and that the rest, comfort, and other means secured by an hospital, should have produced an amended state of health, we may also admit, without subscribing to the monstrous absurdity, and the anti-physiological phenomena of the narrative in question. The party, however, notwithstanding all their mustering, manœuvering, and packing, were completely put to the rout in every direction! They may now appeal to the *gaubemouches* of the public; but they will not soon try their mountebank tricks again before the profession.

A MAN WITH THREE TESTICLES.

Dr. Macann, Staff-Surgeon at the recruiting depôt, Coventry, has lately met with a curious anomaly in a recruit of good stature, and well formed. There were two testes on the right side, (one above the other) and one on the left. On accurate examination the spermatic cords were all distinctly traced to the respective testicles.

AQUA CHALYBEATA.

This preparation is the invention of Messrs. Bewley and Evans, of Dublin. In six ounces of the solution there are 13 grains of citrate of iron, dissolved in water highly charged with carbonic acid gas, and flavoured with orange peel. We have used some bottles of it, and have found it the most grateful and refreshing chalybeate we have ever swallowed. It is to be got now at the principal chemists in London.

DR. SYMONDS' INTRODUCTORY LECTURE AT THE BRISTOL SCHOOL OF MEDICINE.

This is a very sensible and practical lecture, in which the Lecturer recommends his pupils to pursue the eclectic rather than the dogmatic or hobbyhorsical systems of practice—but that without timidity, or wavering between different systems. We have only room for a short extract on the subject of Hydropathy, or rather Hydromania.

"If we are curious to investigate the circumstances to which hydropathy owes its great popularity, it will probably be found that the following are some of the principal causes:—First, the system is very simple—diseases may be manifold, but the remedy is single, though variously applied; second, the universal applicability of the remedy seems to harmonise with its universal distribution over the face of the globe; third, the system dispenses with the use of drugs, most of which are disagreeable, and many not a little dangerous; fourth, it gives ample employment to the superabundant energies of many of the invalids who seek its aid—physicians are often at a loss in recommending interesting occupation to the hypochondriac, to whom nothing is interesting but what has reference to his health; fifth, diaphoresis or sweating, which is one of the great results of the system, is in much favour with invalids. Whether from the additional notions of bygone pathology, or from instinctive feelings (I suspect the former), patients always attach great importance to perspiration; doubtless this is really

one of the most advantageous results of the process. I know a gentleman who for many years has had the greatest difficulty in procuring action of his bowels, and to him the sudorific process of the water cure has been obviously beneficial in compensating the alvine deficiencies. Lastly, the outward use of cold water allays many disagreeable sensations, and at the same time the feeling of glow or re-action gives the idea of an invigorating effect often far beyond what is really imparted. Multitudes of patients of the neurotic class find the sensations attendant upon cold water a pleasant exchange for the anomalous and often distressing feelings which haunt them when their minds are not otherwise occupied—such are dysæsthesia and dysphoria in their various forms; moreover, the use of cold water begets the desire of its repetition. Every one who has accustomed himself to plentiful ablutions of cold water, when debarred from their use feels all the annoyance consequent on the loss of a stimulus. He may fancy that what he experiences is owing to an accumulation of what ought to be removed from the skin, but the time, the lapse of a day, for instance, is often too short for any such effect. The real cause I believe to be the privation of the accustomed excitement of the cutaneous nerves and vessels. This fact gives, I think, a ready clue to the explanation of the perseverance with which hydropathic patients often follow up the system—'increase of appetite hath grown by what it feeds on.'

"As I began with observing, some useful additions to practice may, no doubt, be gathered from the observation of the peculiar methods adopted by the hydriatic professors; but eventually, after the present popular excitement has passed away, cold water will, like all other remedies, find its proper level; it will be known as a valuable expedient in certain diseases, and under certain circumstances, many of which are yet to be learned. The supposed universality of its powers, as I have just remarked, is one of its chief attractions at present; and when that has been disproved, as it surely will be, there is ground for fearing that the remedy will sink in popular opinion to a degree which will be the exact measure to its present undue elevation. The dyspeptic, the hypochondriacal, the nervous, and the victims of ennui and satiety, as they at one time invoked the mysteries and mummeries of mesmerism—at another swallowed, at the bidding of an empiric, hundreds of vegetable pills—or at another, flew for aid to Wildbad and Baden-Baden, and Schlangenbad, and were disappointed—will now not unnaturally appeal to hydropathy, and perhaps with some better success. But the subjects of fevers, exanthemata, and acute visceral inflammations, the unhappy sufferers from organic diseases, and those who have been broken-down by hæmorrhages and exhausting discharges, and those who require the skilful knife of the surgeon—all, in fact, who are in direst need of the remedial art, will, we venture to say, remain adherents of the practice which has been built upon the confirmed observation of disease for successive centuries, and upon the accumulated improvements which every year had added to the knowledge of the human body in health.

HEPATIC ABSCESS—OPERATION.

N. A. Woods, Esq., Madras Medical Service, ætat. 44, of weakly constitution, much emaciated, and in appearance twenty years beyond his actual age. Served 14 years in India. Had been weakly and dyspeptic for some years previously to retiring, but never suffered from any acute tropical disease. Quitted Madras in April, 1841, and had a severe attack of dyspepsia at Bombay the latter end of that month. Arrived in England in June, 1841, in a weakly and emaciated condition; when, for the first time, so far as he knows, hepatic derangement became evident, followed very soon by enlargement of the organ. He treated himself with blue-pill and aperients; but this plan never afforded him any relief. In October, the tumour extended down suddenly (he declares in one night) into

the central and lateral portions of the umbilical region, but without any other sensation at the time than feeling of distention and fulness. He got through the Winter and Spring of 1841–42 but badly, constantly ailing, and using alteratives, &c. as before. In the months of April and May, and after excessive torture from the passage of gall-stones, his health improved perceptibly, as evidenced by increase of muscular power and flesh. On the 28th May, 1842, he began the use of the cold-bath, in the use of which he persisted daily till the middle of August, when a great increase in the size of the tumour, with obtuse pain, manifested themselves. On this occurrence, Mr. Woods sought the advice of Dr. James Johnson, who being absent, requested Mr. Martin to visit him. The tumour was then hard and painful when pressed, and there was a distinct and separate tumour of the cæcum—the health miserably reduced—pulse 96—bowels constipated—no rigours or cold sweat—urine scanty and high-coloured. Mr. Martin prescribed the nitro-muriatic acid bath, with the regular use of purgatives, and the occasional use of the warm-water bath.

In about a month the tumour subsided considerably, (that of the cæcum being no longer perceptible,) with attendant improvement in the general health. He was therefore recommended by Dr. Johnson, who then saw him with Mr. Martin, to continue the same plan of treatment. Shortly after this last-mentioned consultation, Mr. Woods went out of town, and was seized, while there, with catarrh and diarrhœa, for which he unhappily used mercurials, though specially advised against them by both Dr. Johnson and Mr. Martin. From this time he rapidly declined in strength; and, on presenting himself on the 28th September, Mr. Martin thought he could perceive fluctuation in the tumour. The patient's emaciation was extreme—pulse 120, with night delirium—no rigours or cold sweats, either now or previously—tongue bright red, dry, and excoriated. There was most pain in the tumour, especially about its centre, indicating inflammatory action in its peritoneal surface, and a probable adhesion of it to the parietes of the abdomen:—for, there was a distinct hardness around the centre of four or five inches in extent, and alteration in the position of the body caused none in the site of fluctuation.

Under these circumstances, Mr. Martin considered that an opening into the abscess might afford a chance, how remote soever, of saving the patient's life. He therefore requested Mr. Woods to come into town with the view to his better care, and immediately consulted with Dr. Johnson and Mr. Henry James Johnson, who both agreed as to the existence of an abscess, though very deep-seated. On the 1st October, Mr. Johnson explored with the needle, when a little pus was discovered by him in the groove; and, on the following day, he passed a common-sized trochar deep into the cavity of the abscess, when the contents were found so thick as hardly to admit of evacuation. About six ounces of flaky viscid pus did however escape, when the canula was allowed to remain carefully covered over with a large poultice. He had been taking anodynes during the last few nights, the diet being light and nourishing, with a little wine, and the bowels being regulated by the mildest means.

October 3d. Passed a better night, and is altogether easier since the operation—no delirium—pulse reduced to 90—pus discharging freely on the poultice, and the patient expressing himself as vastly relieved.

4th. Had an increase of fever last night, with dryness of the tongue, but continues to feel quite easy—secretions in full activity—no delirium. The diet carefully regulated, and the anodyne at bed-time.

5th. The canula was withdrawn last evening, notwithstanding which, he had more fever than before, but it subsided towards morning, on getting rid of much discharge—pulse 96—tongue moist—feels quite easy—secretions active.

6th. Discharging freely at the opening, and feeling easy, but more weakly—secretions copious—pulse 100—no delirium.

7th. Rested better—less fever—secretions healthy and abundant—pulse 100—feels weakly.

Ordered some Indian ale in lieu of wine.

8th. Continues easy, but becoming daily more reduced in strength. Whenever the discharge is moderated or arrested, he experiences much uneasiness, and sometimes actual pain in the region of the liver, but these instantly subside on a vent being given to the matter—pulse 93—secretions active as before—no delirium.

9th. Was seized at 2 A.M. with violent pain in the site of the abscess, which caused him suddenly to get out of bed. This exertion produced a copious jet from the opening, when he felt quite relieved, and obtained some rest. His strength, however, rapidly sunk from this time; and a collapse, which no stimulants could overcome, terminated his existence at noon, the patient retaining his faculties till within a few minutes of his death.

Dissection.—Body emaciated.

Thorax. Universal and firm adhesions of surfaces of both pleuræ. Structure of lungs pretty healthy. Cavity of pericardium containing about ℥j. of fluid. Heart rather larger than natural, loaded with fat. Valves and great vessels tolerably healthy.

Abdomen. Great omentum, which was loaded with fat, firmly adherent to the parietal peritoneum. Liver much enlarged, forming a tumour of some size extending into the left hypochondrium, and downwards, considerably below the umbilicus; its peritoneal covering adhered firmly to the parts with which it was in contact. The increased size of the liver depended principally upon enlargement of the left lobe.

On examining the opening which had been made during life, it was found to lead into a considerable cavity, situated on the upper surface of the right lobe of the liver near its free margin, bounded by dense and firm adhesions which had taken place between the peritoneum covering the liver, and that lining the parietes of the abdomen; the abscess, however, extended into the interior of the substance of the liver, by a large ulcerated opening, and had made its way also to the under surface of the viscus, forming a large collection of matter in the situation of the gall-bladder, no trace of which could be discovered, its place being entirely filled up by the pouch of matter. On tracing the gall-duct from the intestine, it was found to proceed direct to this cavity, from which it was merely separated by a barrier of lymph. The abscess had also made its way, by ulceration, into the cæcum, a large opening into which existed nearly opposite the ileo-cæcal valve.

Structure of the liver somewhat indurated. The right lobe presented a curious lobulated appearance, being divided into two or three smaller lobes. Kidneys healthy.

Other viscera not examined.

Remarks.—When first this officer was visited by Mr. Martin, he entertained some hopes of his recovery; and the result of treatment during several weeks warranted that view of the case. But the unfortunate and irregular plan pursued by the sufferer, especially in the use of mercury, tended to his injury by increasing the general and local irritation which it could not, under the circumstances of the case, relieve. The subject was cachectic, and the local action appeared altogether chronic, until altered by the operation of mercury. The state of the constitution will account for the absence of many of the symptoms usually characterising hepatic abscess, such as rigour and sweat; and Mr. Martin is disposed to refer the recent untoward change in this unfortunate officer's condition entirely to the use of mercury and exposure to cold. When, on the 28th of September, he presented himself to Mr. Martin, there was death stamped in his very countenance. The destruction of the gall-bladder was a remarkable feature in the disease, and so was the implication of the cæcum—a condition remarked by Mr. Martin as of frequent occurrence in tropical dysentery, when complicated with hepatic disease.

THE ECHOMETER.

A talented young physician, Dr. Aldis, has invented this instrument for i poses of percussion, for which it seems well adapted. It may be pro Savigny's. The percussor is attached to one end of a lever handle, which on the shaft of the instrument, like the lever in the Assalini's tenaculum. under the lever handle regulates the depth to which it can be depressed, s sequently the height to which the percussor can be raised at the other well as the force of the blow from the percussor. Equal sounds are cons produced. The instrument is a very ingenious, and likely to prove a ver one to auscultators.

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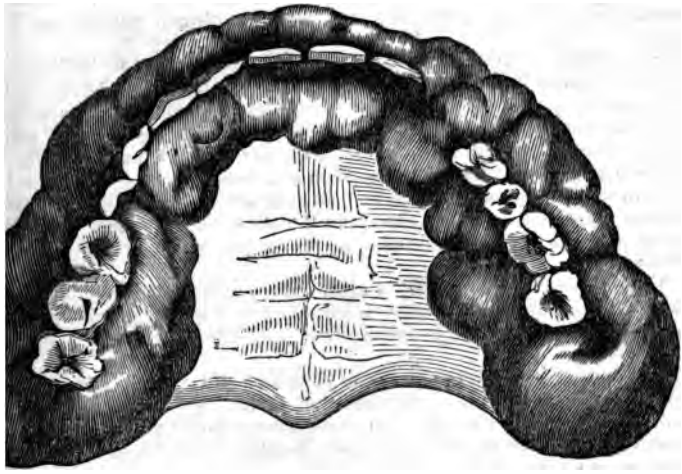
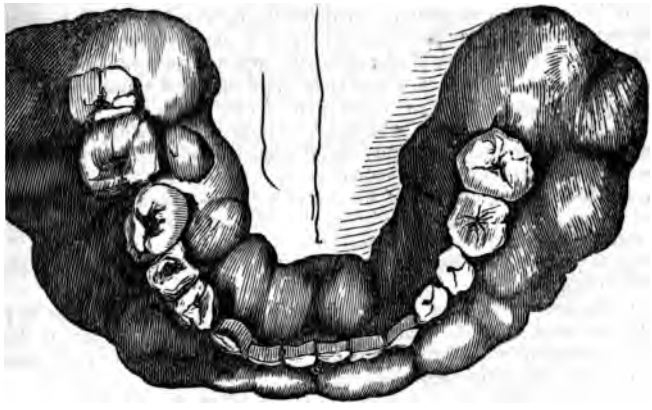
EXTRA-LIMITES.

EXTRAORDINARY FUNGOUS DISEASE OF THE GUMS AND SOCKETS OF TEETH, ITS CONSTITUTIONAL EFFECTS, AND SUCCESSFUL TREATMENT. *Leonard Koecker*, M.D., D.D.S., &c. &c. Surgeon-Dentist.

Upper Jaw.





Under Jaw.

a practice of upwards of 30. years I have been more and more con-
f the various and powerful injurious influence and morbid effects which

the disorders of the teeth and their adjacent parts exert over the whole animal economy, and I have, in all my writings on Dental Surgery, as well as in my practice, endeavoured to prove this fact so important to mankind; but still I have to lament that it is not yet sufficiently known, for which reason, I trust, the following case will not be considered unworthy of public attention.

Mr. Atlee, of Ealing, about 60 years of age, originally of a very robust constitution, had for nearly 30 years been a great martyr to the gout, for which he had taken various powerful medicines with only temporary benefit; he also frequently suffered from severe pain in the ears, and his hearing had become very defective.

The patient was then under the care of Mr. Dickenson of Ealing, and on consultation with Mr. Lawrence, the latter gentleman advised my being consulted.

On the 30th of August, 1840, when I visited the patient, he had been bedridden for six months, and was reduced to a state of great emaciation and debility. On examining his mouth it presented a most forbidding appearance; all the teeth blackened or discoloured and much furred with tartar, were imbedded in, and surrounded on all sides by an irregular fungous, and partially ulcerated mass of a deep-red, almost livid appearance, extending above half an inch broad on both sides of the teeth, and half an inch deep. The whole mouth was in a state of great inflammation, especially the diseased parts, and excessively painful even to the slightest pressure of the tongue, and his breath was extremely offensive.

The fungous excrescences in many parts extended beyond the chewing surfaces of the teeth, and hence any attempt to close them together occasioned agonizing pain, in consequence of which the sufferer was totally unable to take any solid food.

The patient was still in possession of nearly all his teeth, and with the exception of one or two of them, they were all, as far as I could ascertain, sound and firm in their sockets; but my experience having taught me that such a state of the mouth generally arises from a diseased condition of the roots of the teeth or their sockets, and other osseous structure of the jaws, I gave my opinion that the removal of the diseased mass alone would be the far more painful operation, and still be productive of only temporary relief; and as the condition of the patient permitted of no delay or doubtful treatment, I proposed, in preference, to commence by emancipating the diseased mouth from the immediate cause of irritation, namely, all the teeth, and afterwards to remove the excrescences.

Mr. Lawrence and Mr. Dickenson perfectly agreed with my views, and the patient himself earnestly requested that the most speedy remedy should be adopted, at the same time urging the immediate performance of the operation.

By the assistance of some of his family he was placed in a chair, and in the course of ten or fifteen minutes I removed 29 teeth, the extraction of which he bore with the most extraordinary fortitude.

Being replaced in his bed, he stated that he already felt somewhat relieved from his sufferings.

It may be necessary here to remark, that such an operation must be performed with the greatest care and judgment, as it is not improbable that, in the ordinary mode of removing teeth, the strength of the patient would have failed, and he could not have borne the extraction of so many.

On inspecting the teeth I found, as I anticipated, that many of them were diseased, some affected with caries, some with denudation of the periosteum and sockets, and some with exostosis in various stages.

Eleven days afterwards I removed all the fungous mass with strong scissors of different forms, and having requested to be informed of the progress of the case, and receiving repeated information that the patient was rapidly improving in health, I did not deem it necessary to see him again.

Nearly two years afterwards I visited Ealing again, and calling at the house my patient, I was introduced to a robust, tall, healthy-looking old gentleman, om I certainly should not have recognized as my patient. His mouth I found be in a perfectly healthy state. He could masticate well, and articulated with little imperfection, that his loss of teeth would not have been noticed. He had g been able to resume his public duties as parish-clerk.

He stated that since the operation he had been free from any attack of the gout uiring medical attendance: he had not suffered from the annoying pain of ear- e, and his hearing was perfectly restored; and such was the excellent state of health, that though he had reached the age of 62, he confidently expressed his viction that he should "get rid" of the gout altogether.

Did I not fear to trespass too much upon the pages of this valuable Journal, I ght add a very great number of other cases of a similar description, and not erior in importance to the foregoing, which have been placed under my care by various medical friends.

The following two cases seem to me, however, so very important, that I cannot frain from relating them here in as brief a manner as possible.

CASE OF DEAFNESS CURED BY PROPER DENTAL TREATMENT.

Mr. ———, of Dublin, a gentleman holding a high office under Government, as induced, by the recommendation of Dr. James Johnson, to consult me reting his teeth, on the 10th of May, 1841.

He was about 48 years of age, and had generally, with the exception of some ight interruptions, enjoyed good health, but his power of hearing had for the last ree or three years decreased to that extent that he now was almost perfectly deaf, that I could with difficulty make myself understood by him. He had no hope deed of ever recovering his hearing.

After examining his mouth and teeth, however, I gave it immediately as my ecided opinion that the deafness had been produced by a very improper and in- rious dental treatment, adopted during many years, I regret to say, by a very lebrated dentist, and I therefore held out to him the greatest hopes of an almost tire restoration of his hearing. His mouth and teeth were in a most pitiable ndition, not only from dead, carious, and painful roots and teeth, which had been judiciously left in the mouth, and had become covered with fetid tartar, attended ith chronic inflammation and suppuration of the gums and sockets, but also from e irritating and baneful effects of a large set of unskilfully prepared and injudici- usly attached artificial teeth.

By a perfect restoration to health of his remaining teeth, and all other parts f his mouth, and the subsequent insertion of a carefully adapted and properly nserted small set of artificial teeth, I had the satisfaction to see that my patient as perfectly restored to his hearing in three weeks, and a few days before his leparture, a friend and patient of mine in the legal profession, who dined with him t a large public dinner, heard him say, when a friend of his was speaking very loudly in his ears, "Pray do not speak so loud, I hear again as well as ever, thanks to Mr. Koecker."

CASE OF LOST SIGHT RESTORED BY PROPER DENTAL TREATMENT.

Mrs. S———, was requested by Mr. Lawrence, in March, 1840, to consult me about her teeth, giving it as his opinion that her sufferings were principally produced by the diseased condition of her mouth.

The patient was 69 years of age, and although delicate and nervous, did not

particularly suffer in her general health, but for the last ten or twelve years had been gradually losing her sight, so that she had for some years required a constant guide, and had now become almost totally blind.

On a minute examination I found her mouth in a most diseased and disgusting condition. The gums were much swollen, of a red and livid appearance, and, together with the alveolar processes, in a state of much inflammation and suppuration.

Seven or eight dead roots and stumps were remaining in different parts of both the upper and under jaws, intermixed with 11 apparently healthy teeth, to which latter were fastened in different places four small sets of artificial teeth, of one to four teeth each, mounted on gold, and both constructed and inserted in the most injudicious and unskilful manner, so that some of the teeth, to which the sets were attached, had now become denuded of the gums and had been retained, probably for years, in their positions only by the gold fastenings of the artificial teeth. The artificial teeth had not been removed from their places for six or seven years, and had become, along with the natural teeth and roots, encrusted with a mass of tartar to such an extent that it was difficult to distinguish the one from the other.

Some of the roots and teeth were still retained firmly in their sockets, but the greater part were very loose.

In order to obtain a precise view of the case, it was necessary first to remove all the sets of artificial teeth, which proved to be a difficult task; I was obliged to scale off in the most careful manner the greater part of the encrusting tartar before I could accomplish this. Having succeeded however in doing so, I found it unavoidably necessary to extract every remaining root and tooth, not one of them being in such a state as to render the preservation possible.

After the restoration of perfect health to every part of the mouth, the lady was provided with a properly-constructed set of artificial teeth, which fulfilled every desired effect; and I am happy to state that she has gradually so far recovered her sight that she requires no guide, and her general health has ever since so much improved, that now, at the age of seventy, she enjoys better health than for the last ten years.

TO CORRESPONDENTS.

Several Communications are under consideration—among others, the Cases from the Note-Book of Mr. COOKE, of America; but we wish it to borne in mind that we are unable to insert Original Communications, except in the EXTRA-LIMITES, and at the expense of the Author. It will be better, therefore, for such Authors to transmit their Papers to some of the various Journals that have Departments for those purposes.

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No. LXXVI. APRIL 1, 1843,

[BEING No. XXXVI. OF A DECENNIAL SERIES.]

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THE

Medico-Chirurgical Review,

No. LXXVI.

[NO. 36 OF A DECENNIAL SERIES.]

JANUARY 1, TO APRIL 1, 1843.

ON INJURIES OF THE HEAD AFFECTING THE BRAIN. By *G. J. Guthrie*, F.R.S. Surgeon to the Westminster Hospital, and to the Royal Westminster Ophthalmic Hospital, &c. &c. 4to. pp. 155. London, 1842.

THESE observations are the substance of the Lectures delivered in the Theatre of the Royal College of Surgeons in the Spring of 1841. They comprise and present the results of Mr. Guthrie's experience during the Peninsular war, and form a valuable addition to our existing surgical literature.

There is no division into sections or chapters, nor does the arrangement of the lectures appear to have been a precise one. Whatever advantage this may offer the lecturer, and we question if it has any, it certainly is of none to the reader, still less to the reviewer. We will not therefore attempt to present a strict analysis of the work, but select what portions of it, whether facts or doctrine, are either novel or important.

Mr. Guthrie commences by pointing out the uncertainty of the symptoms of injuries of the head, and the equal uncertainty of their diagnosis. After observing, what is well known, that some persons will survive the loss of considerable portions of the brain, while others will sink under much slighter injuries, Mr. Guthrie remarks :—

"The result of my experience on this point is, that brain is more rarely lost from the fore part of the head with impunity, than from the middle part; and that a fracture of the skull, with even the lodgement of a foreign body, and a portion of the bone in the brain, may be sometimes borne without any great inconvenience in the back part. During the war with the United States in 1814, a soldier in Canada was struck by a ball which lodged in the posterior part of the side of the head; the wound healed, and the man returned to his duty. Twelve months afterwards, having got drunk, he fell down in the streets of Montreal, and died. The ball was found on the corpus callosum, where it had made a small hole or sac for itself. After the battle of Toulouse, I had three cases, in each of which a piece of the occipital bone was driven in by a ball, which, striking directly upon it, made a hole no larger than the end of the finger: the absence of serious symptoms in these cases insured exemption from operative treatment. One case was, however, peculiar: the part injured was so exactly the size of the ball, and the bone was so clearly to be felt deep in the posterior lobe of the brain, whilst the ball had probably gone beyond it, that I thought it right to recommend

the man have the bone removed. He declined, but begged to have more to eat, which I in turn refused. He had no bad symptoms, and the wound closed in, and had healed when I left him at Bordeaux about to embark for England. It was the recollection of these cases which induced me after the battle of Waterloo, to recommend, in that of a soldier similarly wounded, that nothing should be done unless symptoms arose demanding the use of the trephine; as none appeared and the wound healed, the man was sent home to Colchester, where he one day got drunk, and also fell down dead in the market-place. The ball was lodged deeply in the posterior lobe of the brain in a sort of cyst. I have never seen a person live with a foreign body lodged in the anterior lobe of the brain, although I have seen several recover with the loss of a portion of the brain at this part. My experience then leads me to believe, that an injury of apparently equal extent is more dangerous on the forehead than on the side or middle of the head, and much less so on the back part than on the side." 3.

A fracture of the vertex is infinitely less serious than one of the basis. The latter obtains most in civil and hospital practice—the former on the field of battle. Hence, perhaps, one reason for the difference of opinion between army surgeons and those attached to the metropolitan hospitals.

Mr. Guthrie refers to the experiments of Flourens, Mayo, and others, on the destruction of parts of the cerebrum, &c. and to the researches of Dr. Marshall Hall on the excito-motory system of nerves. Applying the facts elicited by these gentlemen to the prognosis of injuries of the head, he concludes that,—"Great severity, and persistence of the symptoms lead to the belief that the part of the brain, or spinal cord on which they depend, is directly injured rather than indirectly affected, and that the result is more likely to be fatal. Permanent insensibility and loss of motion may depend on cerebral mischief only. The loss of the mobility of the iris implies an affection of the tubercula quadrigemina. Convulsions, vomiting, a drawing up of the limb not affected by paralysis, stertor, a difficulty in swallowing, strabismus and relaxed sphincters, show derangement of the spinal functions; which is well marked when tickling the eyelashes causes no closing of the lid, the verge of the anus no contraction of the sphincter, the sole of the foot no motion of the toes."

Mr. Guthrie passes to the consideration of *Concussion*. He comes to the conclusion that the exact condition or lesion of the brain is far from being very clear, whilst he agrees, as all rational thinkers must, with Sir B. Brodie, that "there may be changes and alterations of structure in the brain, which our senses are incapable of detecting."

Speaking of the impossibility of determining what amount of injury is necessary to give rise to fatal concussion, he relates a remarkable circumstance:—"Two men were brought to the Westminster Hospital apparently dead; one had fallen from the dome at the top of Buckingham Palace on the back and head of the other, who was walking unconcernedly below, and who was killed on the spot, although no bones were apparently broken. The man who had fallen from the dome—perhaps the greatest height from which any one has fallen without injury, was quite well on the third day, felt only a little stiff, and left the hospital to return to his work."

We once saw a man brought into St. George's Hospital, who had fallen from the top of one of the houses in Belgrave Square, before the building was completed. The fall had been broken by the scaffolding, and he lit

some loose rubbish on the ground. He was taken to the hospital for d. Gradually he was prevailed on to open his eyes, move his limbs, up, get up, and walk to bed. There was nothing the matter with him. Mr. Guthrie adds:

I once saw a girl of ten years of age fall thirty feet from the parapet of a se on the ground, which was rather soft; I ran to her, thinking she must be d, but she got up, and ran away roaring and rubbing her bottom, which ed for several days the only part inconvenienced by the fall. I have read se of the older authors, however, of a young Dutch girl, who, falling in this , was so much shook by it and by the rebound, as to suffer afterwards suppuration on the dura mater at the vertex, requiring the use of the tre-e." 10.

Mr. Guthrie goes on to give a full account of the symptoms and pro-s of concussion. We shall only allude to such points as strike us.

He gives a caution against administering liquids to a patient in this , before he is well able to swallow. Mr. Andrews mentioned to him case of a man who was taken to the London Hospital. After drinking ad fallen down stairs, vomited and died. Nothing could be found of importance on examination, save some meat in the pharynx, a portion hich had also slipped into the glottis during vomiting, and had suffo-d him. Mr. Guthrie has seen a man killed by being made to vomit a lying on his back; and in all cases of insensibility the person should ised when it is intended he should swallow, and a small quantity only, ything, should be given at one time.

here can be no question that the act of swallowing is an *excited* act, being induced by the contact of a substance with the fauces is thence-ard involuntary. But we have only to observe an apoplectic or a paraly-atient to be satisfied of the influence of the brain. Attention and voli-are very requisite for the safety and precision of the process.

omiting is, in general, an early symptom of returning sensibility. But ay wait on extensive lesion. Petit relates the case of a man who died r continued vomiting for seven hours; an enormous quantity of blood found in the ventricles of the brain. We have all seen vomiting usher poplectic paralysis or coma, and it is notoriously a symptom of many nic cerebral lesions. We remember a case of tumour of the cerebellum, hich incessant vomiting was the prominent feature.

We extract a rather long note on the *conditions of the iris.*

Great stress has frequently been laid by writers on the mobility of the iris, indication of concussion, or of compression, or of irritation of the brain. I it in my Lectures, as early as the year 1818, that the motions of the iris influenced in three ways; one by the direct stimulus of light, the patient quite blind; and two by sympathy or indirect influence; the first, with the of the same eye when sound; the second with the iris of the other eye, ther the retina was healthy or otherwise. The facts were stated from the vation of these parts in man whilst in health and under disease; and little thing has been added to our knowledge on the subject by experimental ana-. It has, on the contrary, tended to obscure it practically, although it may ually be useful: for the surgeon would be led into error in the treatment of ases of the eye, who attended to it alone.

The optic nerve is probably not a simple but a compound nerve, and possesses ncident and reflex fibres of Dr. Marshall Hall in addition to those for sen-

sation; the former exerting an influence perhaps on the motions of the iris, which is more distinctly supplied with nerves from the lenticular ganglion. When the optic nerve is divided within the cranial cavity, the iris, it is said by Mayo and by Flourens, loses its contractile power, although it may be again excited, and the pupil be made to contract by irritating the root of the optic nerve still attached to the brain. A man may, however, be blind from a defect in the retina or in the optic nerve, and utterly incapable of distinguishing light from darkness; yet the pupils will contract and dilate under the proper influence of light, proving that it is not on the optic nerve, as one of sensation, that these changes depend. The division of the optic nerve within the head commits in all probability a greater and a different injury on the parts than that which takes place from disease. The part of the brain may not be sound in which perception takes place, whilst that part my be healthy to which other impressions are conveyed. Vision may be lost, yet the iris may be moveable. The cerebrum may be injured, yet the cerebro-spinal column, and particularly the corpora quadrigemina or upper part may be sound. An injury to the third nerve paralyses the iris. It is said that an injury to either of the corpora quadrigemina does the same. A certain kind of injury to the fifth nerve may deprive a person of sight, but it does not always at the same time affect the motions of the iris.

"None of the changes which take place in the appearance of the iris can then be considered as distinguishing signs of concussion or compression, or of irritation of the brain; they merely imply that a derangement of a particular part has taken place within the head, which may not be perceptible examination after death, or which may subside and be removed without leaving any permanent defect.

"Dr. Auchinclose has related a case in the Glasgow Medical Journal, copied into the sixth volume of the Medical Gazette, in which, after an injury to the head, he found the left eye was blind, yet the iris acted freely, and the patient recovered.

"Mr. Hancock, when House Surgeon of the Westminster Hospital, examined the head of a woman, a patient of mine, who died three weeks after the receipt of a blow which was considered to have caused only a concussion of the brain. The pupils contracted for several days before her death, separately and conjoinly, although the levator muscle of the eyelid was paralysed, and the eyelids appeared to be nearly closed. An abscess had formed in the base of the skull, implicating and destroying the third nerve of the left side at the point at which it leaves the crus cerebri, which led him to think that the mobility of the iris might continue after the motor oculi or third nerve was separated from the brain: The other muscles of the eye supplied by the third pair were also implicated, and the eye was fixed and the conjunctiva inflamed." 16.

After alluding to stertorous breathing as a symptom of compression, Mr. Guthrie observes that another modification of breathing is equally characteristic and dangerous—it is a peculiar whiff or puff from the corner of the mouth, as if the patient were smoking. This is not an uncommon feature in apoplexy, and is, in fact, a modification of stertor.

Mr. Guthrie also adverts to the slow and laboured pulse which usually waits on pressure or extravasation, but takes occasion, to state that many of the largest extravasations he has seen, and many of the most diffused, have been accompanied throughout by a very quick pulse. Yet, wherever he has made pressure on the brain or dura mater during life, a diminution of the frequency of the pulse has been the consequence.

Whilst speaking of the effects of bloodletting in concussion he relates two or three cases illustrative of the bad consequence of pushing it too far.

Perhaps one, communicated to him by Mr. Andrews, of the London Hospital, is as striking as any.

"A young gentleman struck his head against the ground by jumping out of a chaise, which slightly stunned him, but did not prevent his walking home, nearly a mile. He was bled to thirty ounces, but gradually becoming more stupefied, he was bled again to thirty ounces more. This was followed by convulsions, and an increase of the comatose symptoms, for which external stimuli were used with advantage. It was now thought necessary by another surgeon to open the temporal artery, but a small quantity of blood only was abstracted, when the patient died." 21.

Mr. Guthrie offers the particulars of several cases illustrative of the effects of bleeding. His opinions on the point are the following;—

"There is then a time, when the stage of depression is slowly passing into that of excitement, in which it may be doubtful what quantity of blood, if any, should be taken away; but the loss of six, eight, or even of ten ounces can do no harm if they do no good, and their loss may enable the surgeon to form a more accurate judgment of the state or degree of the complaint than he could otherwise have done. When the period of excitement or of inflammation has begun, and the patient, although 'disposed to coma, but when roused is still irrational and impatient,' he is not to be left to await the effects of a blistering plaster or a dose of physic, as has been recommended in such cases, but ought to be bled sitting up in bed to whatever extent may be necessary to relieve the symptoms, or at least to cause a near approach to fainting, for nothing less can relieve such a person effectively, and give him a fair chance for life. The bleeding must be steadily repeated as the symptoms recur until relief is obtained, or until it becomes evident that the powers of the patient cannot resist the inroads of the disease and of the efforts made for its cure. The quantity of blood lost in two or three days is sometimes enormous in powerful healthy men, amounting to 100, 150, and even 200 ounces, with the happiest effect." 22.

There can be no doubt that many a life has been saved by active bleeding. There can also be no doubt that many a life has been destroyed by it. The *juste milieu* is not always easy to be hit, and certainly cannot well be defined. But it is something to put surgeons on their guard and to impress them with the conviction that there are dangers on both sides, and that discrimination is necessary.

Mr. Guthrie relates several other cases, and then proceeds to observe, that "in the less important cases of injury one bleeding will answer the purpose, cupping and leeches may also be resorted to with advantage; but in all very severe ones general blood-letting is the only trustworthy source of relief. It should always be done with effect, the finger examining the opposite pulse and regulating the amount to be taken away. At an early period of concussion the quantity should not be large: it should increase with the urgency for its abstraction, and diminish with the frequency of the repetition, being always, however, carefully regulated by the effect. The inability of blood-letting to overcome the disease will be shown by the increase in frequency of the pulse, its diminution in power under slight compression, its greater softness, together with the persistence of the other symptoms.

"It is in these cases that repeated small bleedings, to the amount of six or eight ounces, ought to be resorted to, and when it is doubtful whether the loss of blood can or cannot be borne; they may then be considered

not as curative but as explorative measures, although they may sometimes prove very effective."

In these cases, calomel given early and rapidly, particularly if combined with opium, may be "decisive." We apprehend that, in head cases, the general employment of opium, even in combination with mercury, is not free from objection. Not that we would proscribe opium, but we think that calomel alone, or in connection with James's powder, is, in many instances, preferable. Blisters, at a later period, shaving of the hair, cold lotions or ice to the scalp are, all of course, recommended. But Mr. Guthrie does not mention, what we have seen of great utility, the application of a blister to the scalp and dressing the surface with mercurial ointment. This measure is necessarily applicable to the later stage of inflammation of the brain or of its membranes, after depletion and the internal exhibition of mercury.

Mr. Guthrie refers to the insensibility produced by inebriation, and the possibility of its being mistaken for the effects of injury. But the odour of spirits is demonstrative of the fact, and the stomach-pump is the remedy. "There was a man in the neighbourhood of the Westminster Hospital formerly, who frequently got drunk and as generally fell down apparently insensible, and was brought to the hospital. The first time there was some doubt about the case, but never afterwards; and he became so fearful of the pump as to take care that he got drunk only when at a distance from his home." The difficulty, however, in some cases, is this, to determine when an intoxicated person has fallen, whether cerebral injury may not be combined with the intoxication.

"There is another kind of case of infinitely more importance; it is when mania supervenes on the injury, from the consequences of which it has often been undistinguished. It occurs only, I suspect, when the sufferer has an hereditary predisposition for insanity, and rarely unless he has shown some previous symptoms of such derangement. The first case I saw of the kind was in a soldier after the battle of Salamanca, who had suffered a slight injury of the head, and my suspicions as to the nature of the case induced me to examine the brain after death, when nothing could be found to account for it. The second occurred many years ago in the Old Westminster hospital; the man had fallen from a moderate height, and suffered from the ordinary symptoms of concussion through the first and second stages, when they assumed those attendant on mental derangement. He sat up, talked irrationally as well as incoherently, required some restraint to keep him in bed, owned to no complaint, would eat as well as drink anything that was offered to him; the pulse never ranged above 88, and all the ordinary functions were regular. He died at the end of three weeks apparently exhausted and nothing peculiar could be perceived in the brain. This man might possibly have recovered under the use of opium, which I have since found of great utility in several cases; the preparations I prefer are those of morphia, which seem to cause less headache and less confinement of the bowels, although they sometimes give rise to nausea and sickness, when the dose is too large." 29.

Our readers are aware that morphia has been much lauded in cases of mania, and does certainly in some instances prove serviceable. But we cannot help thinking that more harm than good has been done by it, and that there is an extravagance in this direction, as well as on that of depletion.

Mr. Guthrie touches on the more remote effects of concussion upon the

brain and its membranes. The patient may suffer little, or not at all, at the period of the accident, but subsequently suffer from pain in the head or other symptoms. He relates a case in which very large bleedings were practised for such symptoms and procured perfect relief.

The convalescence after injuries of the head requires extreme care. Relapses are frequent, and undermine the health. "In many instances," says Mr. G., "and particularly among poor people subject to privations and of irregular habits, in whom an injury of the head has not originally been of any apparent importance, such a state of irritation, combined with debility, is very difficult to manage, and requires a combination of local as well as of general means for its cure. A few leeches and blisters may be applied alternately over the part affected, with great advantage, and a mild nourishing diet with gentle alteratives and tonics will expedite the cure, especially when aided by perfect repose and a fresher atmosphere. In persons of a higher station, who rather suffer from casual irregularities, I have found an issue in the arm, which establishes a gentle but permanent drain, a most efficacious remedy; and I am in the habit of recommending its adoption in all cases of affection of the head among elderly persons, in which any material or long-continued inconvenience has been suffered."

Mr. Guthrie passes to the subject of extravasation of blood within the cranium and compression, and seems to lean to the opinion that the brain is compressible. But the knotty question is not much smoothed down, and we must admit that our author leaves it pretty much as he found it.

Our author gives a copious account of the symptoms of compression. The only point to which we shall allude is the relation between the side of the brain affected and the side of the body paralysed. After quoting opinions, Mr. Guthrie observes, that "Burdach found in 268 cases of lesion of one side of the brain, that ten presented paralysis on both sides of the body, two hundred and fifty of one side, and of these, in fifteen the paralysis was on the same side as the injury. The convulsions were in twenty-five cases on the same side as the disease; in three cases on the opposite side. In cases of lesion of one corpus striatum, there were in thirty-six instances paralysis of the opposite side, and six with convulsions of the same side, and in no instance convulsions of the opposite side. In twenty-eight cases of cerebral lesion of one side the muscles of the opposite side of the face were paralysed, in ten cases those of the same side. Paralysis of the eyelid was in six cases on the same side, in five on the opposite side. Paralysis of the muscles of the eyeball occurred in eight cases on the same side, in four on the opposite. Paralysis of the iris in five cases on the same side, and five on the opposite; the tongue being generally drawn towards the paralysed side of the face." Mr. G. alludes to several other opinions, but to mention them is sufficient to expose their hollowness.

We extract Mr. Guthrie's observations on convulsive movements of the limbs, after injury of the head—a subject full of difficulty. After remarking that they have been known from the earliest antiquity to occur, and it has been also known that they generally affect the side opposite the paralysed one.

"When the paralysis is not complete, I have frequently seen that side affected by slight convulsive twitches, whilst the other suffered from well-marked spasms

leading to the belief, that whilst paralysis is an affection of only one half of the brain of the opposite side, or of half of the spinal sparrow of the same side, convulsions are the effect of a more general irritation, capable however of being confined to a part; for partial convulsive motions do very frequently occur without any paralysis accompanying them on the opposite side, and I have not seen these convulsive actions occur, as far as I can recollect, where both sides have been paralytic from injury of the head, although spasms and twitches are symptoms of daily occurrence in paraplegia from disease of the spine. I have met with several cases in which the convulsions have ceased and the patients recovered after the removal of a portion of bone which was irritating the brain; but convulsions have generally been the forerunners of death when the seat of injury was unknown and this assistance could not be given. When they occur in cases apparently of pure concussion, accompanied by inflammation of the brain or its membranes, and the patient recovers after many days of the strictest antiphlogistic treatment, it is possible that the brain may have been lacerated and the cure have been effected by adhesion. Convulsions, it must be remarked, are among the most common symptoms of inflammation of the membranes of the brain, without any such lesion of its substance, although they are frequently wanting. They may be expected to take place about and after the fifth day in injuries of the head, when inflammation of the brain or its membranes is about to extend to or become continuous with the neighbouring parts, and may be more or less severe, varying from a state of partial trembling of a limb to that of general agitation and restlessness of the body generally; from a slight irregular movement of the eyelids, or muscles of the face, to the more marked spasmodic startings of the whole of one side, grinding of the teeth, and contraction of the limbs. Sir B. Brodie has well shown in his memoir, that they may exist at a late period independently of inflammation, 'being aggravated by any additional abstraction of blood, and subsiding on the patient being allowed to take some more substantial nourishment than that which had been allowed him previously.' They would seem in these cases to be dependent on the same or similar causes to those which gave rise to them after the loss of too great a quantity of blood in the first instance, and to be relieved or removed in a similar manner. It is far different with those convulsive movements which, at a late period, became nearly permanent or rigid spasms, resembling tetanus, in which the body is drawn in different directions forwards, backwards, or to one side. They are for the most part the forerunners of death; fortunately they are seldom present except in very hot weather,* and are not even then of frequent occurrence. Examination after death in such cases has shown nothing discoverable beyond inflammation of the pia mater, and an effusion of fluid, generally purulent, on the surface of the brain or in its ventricles, or between the pia mater and tunica arachnoides." 50.

Amongst other cases bearing on the point, Mr. Guthrie relates an interesting one which Mr. Keate took him to see in St. George's Hospital. It seemed to be an instance of injury of the head and paralysis on the same side. The paralysis although positive, was not so complete as to render the patient quite incapable of moving the arm and leg, which were frequently convulsed, although the convulsions which were observable in both were more marked on the opposite or left side. But on dissection the apparent anomaly was cleared up. For, the most serious injury was a fracture of the right parietal and temporal bones, ex-

* "The most remarkable cases I have seen, occurred after the battle of Salamanca, when the weather was very hot and the hospitals for the most part were crowded."

tending to the petrous portion of the latter, and beyond it, which, with the rather large extravasation of blood under and in the course of the fracture, appeared to be sufficient not only to destroy life, but to have caused paralysis of the left side, which it did not do. Another extravasation, rather less in quantity, had however taken place under the upper and anterior portion of the left parietal bone, which enabled him fully to account for the paralysis which took place on the right side, and which nothing but a *post-mortem* examination could have made known.

Mr. Guthrie, like all surgeons of experience in the present day, is no advocate of the trephine. In cases of fissure of the cranium, or of simple fracture, if no symptoms of compression exist, it is improper to resort to it. If symptoms come on, it will be time enough to act upon them.

Mr. Guthrie observes:—

"After the receipt of a severe blow or a gun-shot fracture of the head, which has not even stunned the person at the moment, he may walk to the surgeon, and be dressed, and converse with his fellows, as if nothing had happened; yet in a short time he becomes heavy, stupid, drowsy, unwilling to move, with a slow pulse and a pallid countenance. Inflammation has not yet had time to set in, and extravasation has not always taken place. If the loss of a moderate quantity of blood should relieve such a person, it shows that congestion had occurred, perhaps on the surface of the brain under the injured spot; recovering from which by the unassisted efforts of nature, he would still be liable to inflammation. I have repeatedly seen a sharp bleeding from an incision made to allow a complete examination of the part in such a case, cause the restoration of the patient to his natural state. A return of untoward symptoms during the progress of the case does not always indicate essential mischief, and will be removed, if of a temporary nature, by a further moderate bleeding, by purgatives, and by greater restriction in diet, through irregularities in which, these secondary attacks most usually occur. If the loss of blood should not relieve the symptoms, the case is probably complicated by an extravasation having taken place between the dura mater and the bone, or even in, or on the surface of the brain." 58.

Mr. Guthrie adverts to injury of the parietal bone occasioning rupture of the middle meningeal artery, and effusion of its contents. If the case is recognised, it is, of course proper to trephine. But Mr. Guthrie observes:—"Experience has demonstrated, that persons have recovered after large coagula have been removed; but in all these cases the brain had not lost its resiliency, and had been seen to regain its natural level on the removal of the depressing cause. I have several times seen the depressed brain gradually recover its natural position, and the person open his eyes, and recognise and speak to those about him; but I never saw the symptoms mitigated, or the persons in any way relieved, when the brain remained depressed after the blood had been removed." He relates some cases illustrative of this position.

Serious, and commonly fatal, as fracture of the base of the cranium is, it is not universally so. From several cases, intended to illustrate this, we select one, communicated to our author by Mr. Keate.

Case.—"A young gentleman, eleven years old, fell down a flight of kitchen-stairs, on a stone pavement on his face, in September 1839; his nose bled considerably, and it appeared to be flattened and a little out of shape: he complained only of the pain of his nose, which in a few days quite left him. Three weeks

afterwards an abscess formed behind the left ear of the size of a small hen's egg, which was opened and healed. He then went into Devonshire, and remained some months apparently in perfect health, when, without any cause which his friends could assign, he every night suffered from retching without actually vomiting, which gradually subsided, and he afterwards passed a good night In December, 1840, he died after a short illness, his death being preceded by all the symptoms of hydrocephalus, and Mr. Norton furnished Mr. Keate with the following report of the *post-mortem* examination. The width of the head from ear to ear was greater than usual in a child of his age; the pericranium was easily separated from the left parietal bone, which appeared discoloured; the dura mater appeared more vascular than usual; the sinuses were full of blood; there was considerable effusion between the dura mater and arachnoid membrane, and some coagulated lymph around the tract of the optic nerves, which were soft, and readily torn across; a quantity of serous fluid escaped from the ventricles, of which six ounces were preserved. On removing the brain a small abscess was discovered upon the sella turcica, and the bone in front was very rough. A fracture or fissure was also perceived running across from the temporal and between the sphenoid and ethmoid bones, and which no doubt was occasioned by the fall he had received fifteen months before." 70.

Our author alludes to a very serious symptom, after injuries of the head —the discharge of a watery fluid from the ear. This, probably, comes from the sac of the arachnoid membrane, and is indicative of great danger. In these cases the principal fracture is usually in the direction of the petrous portion of the temporal bone, and towards the body of the sphenoid. Although the extravasation of blood, may take place from a rupture of the lateral sinus, it is as frequently found under the middle, or one of the other lobes of the brain, accompanied by laceration of its substance. Mr. G. has seen the fracture pass across the carotid canal, and the extravasation caused by the rupture of the artery.

Fracture and depression of the inner table of the skull without fracture of the outer, next occupies our author, and he quotes many authors and their cases. But perhaps none are so satisfactory as De la Motte, who supposed that, when the inner table was broken without the outer one, the patient might be aware of the fact, by the peculiarity of sound which followed the blow, resembling that given out by a broken pot when violently struck, and he relates a case in illustration of this idea. It must be owned that the diagnostic sign is likely to prove very valuable.

Mr. Guthrie, however, very justly, as it seems to us, discountenances the notion that depression of the inner table, without fracture of the external one, is a common accident, or one warranting interference. He remarks :—

"I therefore think it safe and reasonable to come to the conclusion, that although these things have happened, they will rarely occur again. I have never, in the great number of broken heads I have had under my care on many different, and grand occasions, actually known the inner table to be separated from the outer, without positive marks of an injury having been inflicted on the bone or pericranium, however slight that injury may have been; and although it is not possible to doubt the fact of fracture of the inner table having occurred it is very desirable in a practical point of view not to bear it in mind; for if a surgeon should be prepossessed with the idea that the inner table might be so readily fractured, and separated from the diploe placed between it, and the outer table, and

thus cause irritation or pressure on the brain, few persons who had received a knock on the head, followed by any serious symptoms, without fracture or depression, would escape the trephine, and the worst practice would be again established. An operation should never then be performed under the expectation that such an accident may have happened, unless it is apparently required by the urgency of the symptoms indicating compression or irritation of the brain, which cannot be relieved by other means." 79.

Mr. Guthrie admits, indeed, that a blow on the head will frequently detach the dura mater from the inner table by rupturing its vessels, and thus give rise to compression or irritation of the brain from the effusion of blood or the formation of matter, and that the inner table may become diseased from the same cause, and be the cause of ulterior mischief. If so, there are ulterior means of treatment. We shall quote one or two of the several cases cited by Mr. Guthrie.

Case.—"Mr. C. Trye, of Gloucester, relates a case of an injury of the internal table of the skull successfully treated in the year 1786. Nine weeks after the accident, the external table of the right parietal bone being evidently dead, the trephine was applied, and he found then that the greater part of the internal table had been removed by absorption, and that granulations were springing up from the parts beneath, but whether they were from the dura or pia mater or brain could not be accurately ascertained. The man recovered." 78.

Case.—"Dease trephined a young man nine months after he had received a blow on the upper part of the os frontis, which caused him great pain in the head, rendering him in general incoherent in his speech, and infirm in his limbs. The wound was not quite cicatrized. On examination, Dease found a depressed fracture larger than the breadth of a sixpence, which he removed with a large crown of a trephine. The three subsequent days he extracted ten pieces of the inner table, which had been driven into the brain. The man left the hospital in about three months in perfect health." 81.

But perhaps the following is the most extraordinary case of all. Whether or not it is a good sample of Continental surgery we leave it to others to say.

Case.—"A man 36 years old received a blow from a stone on the left parietal bone, from which he thought he had recovered on the sixth day: it was however followed by such frequent and violent attacks of pain as to render him unable to work; and after all other means had been tried in vain, he was trephined. Nothing abnormal being found, Walther thought he would replace the circular piece of bone he had removed, which he did, and the replacement was not followed by any severe symptoms. At the end of three months, during which time the pain in the head went away, he saw a loose piece of bone at the bottom of the wound, which had not healed, and on removing this, he found it was a part of the external table of the replaced bone. The wound soon healed after this, and the patient recovered (in defiance of the doctor)." 83.

Passing over many other cases, we are induced to insert one which occurred to Mr. Guthrie himself.

Case.—"M. A. Farnham, aged twenty-three, a stout healthy-looking girl, received a blow, two years ago, from a stone falling from a door-way under which she was passing, which struck her upon the left side of the head at a spot an inch anterior to the parietal prominence, the weight of the stone, and the space

through which it fell, making the estimated force with which it struck the head equal to sixteen pounds. The immediate effect of the blow was insensibility, followed by acute fixed pain in the head, which has ever since continued to mark the seat of injury. A week after the receipt of the blow, she began to lose the power of moving of the right arm, there being however no loss of sensation or any disturbance of the cerebral functions.

"During the following twelve months her symptoms remained unchanged, and this period was spent in Guy's, St. Thomas's, Westminster, and St. George's Hospitals; but having derived no relief whilst in any of these institutions, she became an out-patient under the care of Dr. Roe.

"After the lapse of a few weeks, the paralysis of the arm suddenly increased, sensation still being unaffected, and she experienced no further change in her condition until after eleven months, when she was again admitted into the hospital, her symptoms then being the following:—the arm and leg of the right side quite paralytic, the former, which had previously been flaccid, having now become remarkably rigid, and its temperature being below that of the opposite side; vision, particularly of the left eye, imperfect, the pupils however acting naturally; hearing on that side also affected; memory bad; respiration frequently slow and almost stertorous; the countenance assumed a dull heavy expression, and she manifested an unusual tendency to sleep. All the ordinary remedies having failed to relieve these symptoms, Mr. Guthrie was requested to see her, and the operation of trephining was eventually agreed upon.

"*April 1st*, 1841.—Mr. Guthrie this day removed a disc of bone from the exact point in the parietal region to which she referred the pain. The portion of bone presented no evidence of disease; its thickness varied from two and a half to four lines, the latter measurement corresponding to the part most distant from the sagittal suture: the vessels of the diploe bled freely, the dura mater was quite healthy, and without any very evident motion.

"On visiting her *an hour* after the operation, she raised the previously paralytic arm several inches from the bed, and was able to bend and extend the fingers. The pain in the head was considerably less, and her countenance, before dull and heavy, was now remarkably animated. Sensation had returned in the arm, and partially in the leg. Her pulse was calm, and skin cool.

"Ten hours after the operation she was attacked with rigors, followed by pyrexia and all the symptoms of commencing inflammation of the brain. By the immediate abstraction of blood, which was three times repeated during the succeeding twelve hours whenever the pain in the head or the force of the circulation increased, every bad symptom was removed. In the course of three days the paralysis had completely disappeared, sight and hearing again became perfect, and after passing through a speedy convalescence, she quitted the hospital completely recovered." 85.

Certainly, the preceding is a singular case. We are told that the girl has since had some relapse of pain and uneasiness in the head, and that she is of a very hysterical temperament. Could the symptoms have been of this character? We know how many forms they assume, and how they sometimes, by a sort of caprice, yield to operations or to remedies which are generally unadvisable. The absence, in this instance, of any perceptible lesion, the sudden recovery without any assignable reason, and the temperament of the girl, render this not altogether improbable. At the same time there is a per contrà, which throws a great degree of obscurity upon the case.

Mr. Guthrie directs attention to a peculiar fracture of the inner table. It occurs from the blow of a sword, hatchet, or other clean-cutting instrument, which goes through scalp and skull into the brain. It is usually

supposed that in this instance there is no fracture, but an incised wound of the bone. When the outer table only is divided, it should be so treated; and so it should be when the diploe is involved. But "when the sword or axe has penetrated as far as, or through the inner table, the case is of a much more serious nature; for this part will be broken almost always to a greater extent than the outer table; and will be separated from it, and driven into the membranes, if not into the substance of the brain itself; the surface of the bone showing merely a separation of the edges of the cut made into it. These cases should all be examined carefully. The length of the wound on the top, or side, or any part of the head which is curved and not flat, will readily show to what depth the sword or axe has penetrated. A blunt or flat-ended probe should in such cases be carefully passed into the wound, and being gently pressed against one of the cut edges of the bone, its thickness may be measured, and the presence or absence of the inner table may thus be ascertained. If it should be separated from the diploe, the continued but careful insertion of the probe will detect it deeper in the wound; a further careful investigation will show the extent in length of this separation, although not in width; and will in all probability satisfy the surgeon that those portions of bone which have thus been broken and driven in, are sticking in or irritating the brain. In many such cases there has not been more than a momentary stunning felt by the patient; he says he is free from symptoms, that he is not much hurt, and is satisfied he shall be well in a few days."

Mr. Guthrie relates some cases in point. Perhaps the first is as much to the point as any.

Case.—"An officer was struck on the head in Halifax, Nova Scotia, by a drunken workman with a tomahawk, or small Indian hatchet, which made a perpendicular cut into his left parietal bone, and knocked him down. As he soon recovered from the blow and suffered nothing but the ordinary symptoms of a common wound of the head with fracture, it was considered to be a favourable case, and was treated simply, although with sufficient precaution. He sat up, and shaved himself until the fourteenth day, when he observed that the corner of his mouth on the opposite side to that on which he had been wounded was raised, and the other drawn aside; and that he had not the free use of the right arm so as to enable him to shave. He was bled largely, but the symptoms increased until he lost the use of the right side, became comatose and died. On examination, the inner table was found broken, separated from the diploe, and driven through the membranes into the brain, which was at that part soft, yellow, and in a state of suppuration." 87.

The application of the trephine is, of course, the proper practice. The following is an instance of it.

Case.—A soldier was wounded by a sword on the top of the head. The bone was apparently only cut through, but the inner table was depressed, and felt ragged under the probe. On the fourth day, the symptoms of inflammation increasing, and not being relieved by bleeding, Mr. G. removed a central portion of the cut bone by one large crown of the trephine, and took away several small pieces which were sticking into the dura mater, after which all the symptoms gradually subsided.

Mr. Guthrie quotes a case and an opinion of Sir Philip Crampton's.

The case we may omit—the opinion is to the effect that where, in fractures of the kind we have been discussing, a fragment of inner table is driven into the brain, it is better not to trephine at first, for, argues Sir Philip,

"The operation, in the first instance, would have been an additional violence to parts already severely irritated, and consequently an additional source of inflammation. It would besides have removed all support from the wounded brain, a great part of which would (it is probable) have escaped through the opened dura mater. If the patient escaped these first dangers, then came the danger of hernia, or rather fungus cerebri—one of the most frequent and dangerous consequences of wounds of the dura mater." 90.

But hear Mr. Guthrie on the other side:—

"It appears to me that too much stress is laid upon a difference which is supposed to exist in the danger of trephining a man on the first or on the seventh day after an accident, and that an error may be committed in believing that the trephine is a more dangerous instrument on the first day than on the seventh. The question here is not whether the man is to be trephined or not? but which will be the best and safest day or time to do the operation? I do not hesitate to say the first day. I believe the violence to be greater when done on parts already in a state of inflammation than when they are sound. I am quite satisfied, that when the inner table is sticking through the membranes and into the brain itself, the individual will in most cases ultimately die miserably of the accident if not relieved by art; and that it is less safe to let him designedly run the certain risk of cerebral irritation, which when once excited is often indomitable, than to remove the cause, and so endeavour to prevent the evil. If the cerebral irritation only manifested its effects on the surface of the dura mater by causing suppuration there, I might yield my opinion, but as I know that it often gives rise under these circumstances to the formation of matter on the surface of the brain, and under its membranes, where it is generally deadly, I cannot assent to that which may be called 'la chirurgie expectante.' Lastly, I do not think that there is more danger of a hernia cerebri when the operation is done early than when it is done at a later period; on the contrary, I think the patient has a much better chance of escape from hernia cerebri, and from all other evil, when the local and the general treatment are alike immediately decided, and efficient." 92.

There is much to be said then on both sides. Nay, Sir P. Crampton's opinion is reinforced by Mr. Colles, who, in reference to another case, remarks—"In very small depressed fractures (such as may deserve the name of punctures of the bone), where a depressed bit of bone is sunk into the brain, it will perhaps be prudent to postpone the operation for a few days. For if the operation be performed immediately after the receipt of the injury, and if we attempt to seize the depressed fragment, the first touch of the forceps sinks it more deeply into the brain; portions of the brain, from the softness of its texture, rise up and conceal the bone both from our sight and touch, whereas, if we defer the operation for a few days, we give time for the adhesive inflammation to take place; this circumscribes the depressed piece, hardens this spot of the brain, and thus enables us more easily and certainly to lay hold of the fragment of bone."

For our own parts we feel inclined to agree with Mr. Guthrie. If symptoms are likely to occur, and if the trephine will probably be necessary, it seems more consistent with reason and analogy to use it on uninflamed than on inflamed parts, as a preventive measure than as a curative.

one. If, indeed, it could be argued that, in a large proportion of cases, symptoms are not likely to ensue, the case would then be different. Mr. Guthrie reasons both ingeniously and forcibly upon the matter:

"It is necessary," he says, "to recollect that the brain appears to be insensible, or nearly so, when first exposed; and it has rarely occurred to me to see a serious convulsion, or anything beyond vomiting take place on the removal of a piece of bone from the brain; nor do I suspect any difficulty will be found in removing such small fragments as can be seen, with a pair of forceps duly adapted for the purpose. It is impossible to say at what period of time the brain becomes irritable, and no longer admits of being touched without convulsive movements ensuing; but whenever this state of irritation has commenced, and its existence is proclaimed by the excitement which takes place on touching the fragment of bone, the surgeon should at once desist from all attempts to remove the foreign body. The brain under ordinary circumstances is, I conceive, much more likely to recover from an injury, all foreign or irritating matters being removed, than when also suffering from their presence. Should I be mistaken on this point, the opinion generally entertained of the propriety of removing extraneous bodies from wounds in general, must, I imagine, be erroneous. It is very inconvenient to remove a granule of iron which has been implanted in the cornea when the eye is irritable, and particularly when the surgeon has not a sharp-pointed instrument to lift it out with; it will doubtless be more easily removed when suppuration has taken place, but the cornea will be in a much worse state. There is in fact no comparison between the two modes of proceeding; and I suspect it will be found to be much the same with the brain as with the cornea.

"The establishment of the principles which ought to regulate the practice of surgery in cases of fracture and depression of the inner table of the skull is of the greatest importance, and it is on this account that I have quoted so many authorities on the subject. The principle being laid down that it is right and proper to examine all such wounds with a blunt flat probe, in order to ascertain if possible whether the inner table is depressed and broken; the question necessarily arises, what is to be done when such depression and breaking down of the inner table is ascertained to have taken place? There can be no hesitation in answering: that in all such cases the trephine should be applied, although no symptoms should exist, with the view of anticipating them. The old doctrine, it may be said, in regard to fractures generally, is revived in these cases, but on a principle with which our predecessors were not sufficiently acquainted. A patient very often survives a mere depression of the skull; he may, and occasionally does survive, a greater depression of the inner than of the outer table; but I do not believe that he ever does survive and remain in tolerable health, after a depression with fracture of the inner table, when portions of it have been driven into the dura mater. If cases could be advanced of complete recovery after such injuries, I should not consider them as superseding the practice recommended, unless they were so numerous as to establish the fact, that wounds of the dura mater and brain, by pieces of bone, are not extremely dangerous. I have referred purposely to many cases in which a cure was effected after a lapse of time, by the bone being removed; but they rather support than invalidate the principle I have inculcated. There are great objections I admit to the trephine being applied in ordinary cases of fracture, which are not attended by symptoms of further mischief; but the nature of the cases which I have particularly referred to, having been ascertained, I maintain that the practice should be prompt and decisive in every instance in which the surgeon is satisfied that there is not merely a slight depression or separation of the inner table, but that several points of it are driven into the dura mater. If one trephine will suffice, the central point being applied close to the edge of the middle of the wound in the bone, it

should be applied there; but if the cut be longer, and the spicula of bone extend upwards and downwards in its length, a small trephine should be applied as near each end as may be judged advisable, and one edge of the cut bone should be removed by the straight saw, of which Paré and Scultetus made such use in ancient times, and which Mr. Hey of Leeds revived in modern surgery; or the small straight saw may be used alone, if the object of removing a portion can be attained without the trephine. By these means sufficient room will be obtained to remove the broken portions of bone which are irritating the dura mater, and brain." 95.

When the fracture of the cranium is from a sharp or weighty instrument impelled in a horizontal direction, the derangement of the inner table just noticed may not occur. The nature of the injury in such cases can be more readily perceived, and the broken portions of bone removed. Hey's saw may be necessary, and the wound should be simply treated.

"When," says Mr. G., "a portion of bone is as it were sliced off with the scalp, and adheres to it firmly, the scalp and bone should be re-applied; and the cure will often be effected without difficulty. When the portion of bone cut off, and hanging to the scalp which is turned down, has but little adherence, it had better be removed." 95.

Several cases are related. But the following particulars are, perhaps, the most interesting.

"In the museum of the Royal College of Surgeons there are ten skulls which have suffered from very severe slicing cuts. They appear to have been collected from the burial-place of some establishment for invalid soldiers in Germany. The portions of bone thus sliced, and they are large pieces, were once detached, and afterwards reunited a little out of their proper places, so that the points of union and of separation can be distinctly seen. These fissures are all in a certain state of progress towards being filled up by bone, and the patients must have lived some months, if not years, after the receipt of their respective injuries; for bone is deposited apparently with difficulty, and most carefully in all such cases, so as not to irritate the membranes of the brain. The opening in the first instance is filled up by granulations, over which a thin skin is formed, this afterwards became firmer and harder, being in some cases, where the trephine has been used, a thin but strong membranous expansion extending from one edge of bone to the other. In others it is thicker and more solid, and in a few instances osseous matter is deposited in its circumference so as in part to fill up the opening; the edges of the bony circle made by the trephine becoming gradually thinner as they appear to grow inwards. It is rare that an exfoliation does not take place from the edges of the cut bone, or from the circle made by the trephine. It has been occasionally observed after death, that the circular cut edge of the bone does not become thin in the manner described, but that a sort of ridge forms around and within it, which was thought to be the cause of death in some persons who died suddenly, and in whom no other derangement of structure could be perceived." 97.

Mr. Guthrie is an advocate, of course, of union by the first intention in scalp-wounds, unless the integument has been excessively bruised. Speaking of erysipelas of the scalp, he directs attention to diffuse inflammation beneath the occipito-frontalis, and to the necessity for prompt and free incisions. All surgeons are agreed upon this head. We are not aware that the following practice is so universal.

"Erysipelatous inflammation is more apt to follow punctured wounds in per-

sons who live, or have lived irregularly; and the moment the parts around the cut or puncture have become puffy, the suface of the wound changing from a red to a yellowish colour, with a thin discharge instead of good pus, an incision should be made through them, and repeated in different places as often as may be found necessary. It relieves the tention, and prevents the quickened pulse, the irritative fever, the delirium which would follow, and which neither bleeding, purging, nor the other constitutional remedies which the state of fever may indicate will remove. If it should be neglected, suppuration and sloughing will extend under the tendon of the occipito-frontalis, or the fascia of the temporal muscle, as the case may be, and the greatest danger will be incurred. Mr. Pott, and many of the older surgeons, were, it is but just to say, aware of the value of incisions in such cases; and Dessault derived the greatest advantage from emetics and purgatives, the use of which is deserving of the greatest attention." 102.

Mr. Guthrie dwells on the great distinction that obtains between depression of the cranium in children and in adults. In the former, the inner tables does not break so readily, the brain bears pressure better, and the level of the bone is gradually restored. He believes that, for the last twenty years, the greater number of successful cases of recovery from depression or fracture of the skull, that were not trephined, were in young persons. The following case is a marked one.

Case.—"Twenty years ago a small child fell over the banisters of the second floor in a public-house at the top of the Haymarket. I saw it as soon as possible afterwards, lying on the bed, motionless, senseless, breathless, with a hollow in the parietal bone that would have held half of a small orange, and I thought it was dead. In a short time it gave a gasp, another followed at an interval so long as to excite surprise, and a third shortly afterwards led to some hope. The motions of the heart and the pulse, which were only now to be felt, being equally irregular and defective. It gradually recovered, and the next day breathed regularly, could speak, and answer shortly, although apparently otherwise stupid and restless. Pulse 90, and regular. Cold lotions were applied to the head. The loss of a little blood by leeches with some smart purgatives gradually removed the unfavourable symptoms, and the child began to walk about, with a hollow in the side of the head which exceeded anything I had seen before, and it was several weeks before the skull regained its level. The same thing then takes place in the bending of the flat bones of the skull in young children, which is so often observed in the long ones at the same period of life"* 103.

Our author now approaches a knotty question—the essential difference between a simple and compound fracture of the cranium. Our readers are aware that Sir Astley Cooper insisted much on this distinction, and advised that, in compound fracture of the cranium with depression, the bone should be raised by the trephine, or otherwise, whether there were symptoms of pressure or not. Mr. Guthrie's ideas upon this subject differ not only from those of Sir Astley Cooper, but from those of a large number of surgeons of the present day.

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* "Avellan says that a girl of fourteen had a depression of the right parietal bone from a blow, which gave rise to mental derangement amounting almost to imbecility, for three months; at the end of which time the depressed bone gradually resumed its level, and the girl completely recovered. In Quesnay, Memoires de l'Academie de Chirurgie de Paris, tome i."

"The difference between a simple and a compound fracture of the leg is often considerable, it is more often dependent on degree: and when the fracture is nearly transverse, and the skin cleanly divided, the difference between it, and a simple fracture of the same part, is little more than one of time. I suspect this to be the case with an injury of the head, and my experience induces me to believe that the difference between the two states in fractures of the skull has been much exaggerated; so much so, that I place no reliance on the supposition that there is more real danger in a case of fracture with depression in which the scalp has been divided, than when it has been only bruised, and not divided; and I apprehend that in all cases in which a fracture with marked depression is known to have occurred in an ADULT, it is the best practice to divide the scalp, and ascertain the nature and extent of the depression.

"If the result of a great number of comparative trials should prove in favour of never, under any circumstances, raising a depressed portion of bone in an adult, but of leaving it to the efforts of nature, an incision in order to ascertain the state of parts below ought not to be made; but as such result is not likely to be obtained, according to my observation and experience, the practice recommended appears to be the best." 104.

We apprehend, that most surgeons are now in favour of *not* cutting down on depressed bone, unaccompanied with wound, *if there be no symptoms*. If there are symptoms, all surgeons, we suppose, *would* cut down. Mr. Guthrie's rule, *always* to cut down in an adult does appear to us too absolute, and calculated to lead to abuse of the trephine. Such, at least, is our impression. Whether the rule of Sir Astley Cooper, is not too absolute also, we will not take upon us to determine. We are rather inclined to think that it is; and in a slight case of compound fracture of the cranium, with depression but without symptoms, we fancy we should pause before we used the knife.

But to return to Mr. Guthrie, and his opinions with regard to the trephine—

"The cranium," he proceeds, "together with the fracture and depression, being exposed, the question whether the trephine should be applied or not, is now to be determined. If the operation by the trephine, or that of sawing a piece of bone out of the head, was not in itself dangerous, there could be no hesitation about its use; but it is a dangerous operation, especially in crowded hospitals, and ought not to be resorted to when it can be avoided. I am of opinion, that if any ten healthy persons were trephined in a hospital, one would in all probability die from the effects of the operation; and that three or four more might have a narrow escape from the inflammation of the brain and its membranes, or the other consequences which would probably ensue It is not the admission of air, which has been even lately supposed to do mischief, that is to be dreaded in these cases, but the same kind of irritation which often follows the abstraction of a piece of bone under other and more ordinary circumstances at a later period of time." 105.

From several illustrative cases, we select what seem to us most characteristic. The following shows the time that a ball may lodge within the cranium with trifling symptoms, and their ultimately severe or fatal character.

Case —"Thomas O'Brien, 28th regiment, aged twenty-three, was wounded by a musket-ball on the 16th of June at Quatre-bras; the bullet penetrated the occipital bone below and to the right of the junction of the lambdoidal and

agittal sutures. On his arrival at Colchester, the wound was healthy in appearance and healing rapidly. It appeared from his own account that for some hours after the injury he was totally deprived of sight; since that time he has been constantly more or less affected with headaches, for which he has been prescribed occasional cathartics and low diet. He has been also affected with pain and weakness in both eyes, but more particularly in the right. While at Brussels and during his progress to Ostend he lived very irregularly, and was frequently intoxicated; the external wound was entirely healed on the 20th of July, and no suspicion existed that the ball was lodged in the brain. On the 25th matter was perceived under the scalp, and was yesterday evacuated. To-day, the 27th, he complains of increase of headache; pulse small and quick. V. S. ad ℥ vj. Haust. cathart. statim. 28th. In the course of this day his symptoms have become very urgent; he is restless with a very quick pulse; an extensive crucial incision was made in the site of the original wound, and now for the first time it was discovered that the ball had penetrated the brain; several loose pieces of bone were extracted; a considerable quantity of arterial blood was suffered to flow from the small vessels divided in the incision. His bowels had been well opened by the cathartic. The most vigorous treatment was continued, but the symptoms notwithstanding increased, and he died on the morning of the 29th of July.

"The ball was found lodged near two inches deep in the substance of the right posterior lobe of the brain; a considerable quantity of pus surrounded it; some inflammation of the brain and its membranes was observed, but it was much less than might have been expected." 107.

In the next case, the ball did not lodge nor irritate the brain, and the result was more fortunate.

Case.—A. Clutterbuck, 61st regiment, aged twenty-five, was wounded in the back of the head by a musket-ball at the battle of Toulouse, on the 10th of April, 1814. He felt little inconvenience from the wound the first two days. On the 14th he complained of severe pain in the head, giddiness, and dimness of sight; the face was flushed, pulse hard and frequent. Twenty ounces of blood were taken from the arm, and the wound enlarged to expose the cranium. The upper part of the os occipitis was found fractured by the ball, and a circular portion of it, about the size of a shilling, was depressed and fractured. 15th. Pain in the head much abated; no giddiness, dimness of sight, or any unfavourable symptom; pulse still hard. V. S. ad ℥ xx. To be well purged. 19th. He was bled again this day to the extent of twelve ounces, as a matter of precaution. 23d. Continues free from any bad symptom. May 8th. The wound is now much contracted. He has been out of bed for some time past, and feels no inconvenience. A small portion of the bone still feels bare to the probe but the greater portion of the depressed piece is covered with healthy granulations. No exfoliation has taken place. May 24th. The wound is nearly healed; he is in good health and spirits, and without inconvenience. Discharged to Bordeaux.

We introduce a third case of a different complexion, as it bears upon a point of treatment.

Case.—"William Rogers, aged 19, of the 32d regiment, was wounded on the 18th of June by a musket-ball, which entered at the inferior angle of the left parietal bone; it knocked him down, and for a few minutes rendered him sense-

less. On recovering his mental powers, which he soon did, he found that he was unable to speak, not so much (as he says himself) from the want of power to form words, as from the incapacity of giving them sound. He was conscious of everything passing around him, and reasoned correctly; he retired out of the reach of shot, and then lay down for the night. On the following morning, finding the picquets retreating, he fell back himself on Brussels, where he was examined and dressed. On the morning of the 18th he reached Antwerp on horseback, very giddy, and overwhelmed with fatigue, fasting and watching; he was admitted into the Minime General Hospital, and put to bed, when he soon fell into a sound sleep, which with some tea refreshed him much.

"June 19th. On examining the wound, the ball was found to have passed obliquely upward and backward at least two inches, and could be distinctly felt with a probe. It gave more the idea of having raised the outer table than that of having depressed the inner; both tables must however have been displaced. The defect in speech was in some measure restored, and this with giddiness were the only symptoms of compression. A poultice was placed over the wound, a sharp purgative given, and spoon diet ordered.

"20th. The pain and giddiness having increased, with annoyance from noise and exposure to light, twenty-six ounces of blood were taken from the arm. The following day the purgative was repeated, and the patient was much relieved: a faltering in the speech continued for many days. Everything went on well, the wound was nearly healed, and he was considered almost fit to be discharged, when, on the 16th of July, the wound began to open; on the 18th it was dilated and a portion of the cranium removed by the forceps, which was soon followed by symptoms of inflammation of the brain, and twenty ounces of blood were taken immediately from the arm; purgatives and diaphoretics were ordered, and the strictest abstinence enjoined. 23d. Venesection was repeated, as well as the other means usually adopted to reduce high action. 24th Completely relieved. Saline mixture continued; a little meat soup allowed. 26th. Another portion of the cranium removed, the dura mater being fully exposed; the general health in the best state.

"August 3d. Doing remarkably well; the wound healthy; the pulsation of the brain evident; the power of speech perfectly restored. The ball yet remains in according to the opinion of the patient (who is a fine intelligent lad), and he thinks has gradually descended towards the petrous portion of the left temporal bone. Sent to England at the end of the month well." 106.

Mr. Guthrie observes, upon this case, that the bone and ball ought to have been removed in the first instance. The subsequent operation perilled his life, and as he was discharged with the ball lodged (though, by-the-bye, this does not seem to us very likely, the dura mater being uninjured, and no symptoms existing), it is probable that he did not long survive.

Mr. Guthrie relates a case for the purpose of showing to what extent depletion may be advantageously carried.

Case.—Lawrence Moore, æt. 27, was knocked down on the night of the 6th of April, 1816, by a blow of a stone, which fractured the upper and left edge of the frontal bone, the depression being about an inch and a half square. V. S. ad ℥ xxv. Took out the detached pieces of bone and dressed the wound simply; he lost about twenty ounces of blood during the operation. He had a pretty good night, but, on the 7th, pulse small and very hard; head feels to himself full, and gives the sensation as if it were bound with an iron hoop (his own words); eyes very suffused. V. S.

ad ℥l. with relief. At 8 P. M. the pulse having risen, V. S. ad ℥xxv. with benefit. Elect. scammon. ℈ij.

8th. Awoke better, but at 9 A. M. the pulse had risen to 130, hard and small; has a severe throbbing sensation in the head over the seat of the injury; tongue white and dry. V. S. ad ℥xl. with further benefit.

10th. Has been well purged; tongue clean, pulse more natural, eyes much depressed, the redness has left them, the fulness of head is also gone, and on the whole he is doing well. The discharge of a sanious nature, the wound externally like ochre. In the afternoon the pulse rose, but was not so hard as to indicate the use of the lancet; has pain and fulness over the injury. Was purged with senna, &c. and after this had no further symptoms of consequence. He was discharged cured on the 23d of June.

"This case," says Mr. G. "shows the advantage to be obtained by removing such fractured and depressed portions of bone as might irritate the dura mater and brain if allowed to remain, and also demonstrates the very great extent to which blood may be drawn in strong and healthy persons, in a short period (160 oz. in three days.) When the symptoms were not so immediately urgent as to demand the use of the lancet, the free exhibition of drastic purgatives was attended by the best effect."* 109.

A want of method in Mr. Guthrie's writings, and an absence of logical precision in his reasoning, render it not unfrequently difficult to determine exactly what he intends, or what certain cases are meant to establish. But we gather from some remarks upon the cases, that if the compound fracture be attended with moderate depression, Mr. Guthrie would not attempt to elevate it, provided there were no urgent symptoms, whilst if he thought there were pointed pieces projecting inwards, and likely to irritate the brain, he would elevate. "If," he observes, "the examination of the depressed part had led to the apprehension that such points of bone did exist and were sticking into and irritating the dura mater or brain, I should have removed them, under the belief that although they might not at the moment have given rise to any other symptoms than those which depended on the blow, the time would come when they would scarcely fail to cause those which usually accompany the formation of matter within the skull; or if this danger should also have been avoided, that the evils which have been noticed from p. 79 to 84 as occurring at a later period, and which ultimately require the same operation for the relief of the patient after months of acute suffering, might be encountered; the cases at the pages indicated were referred to solely for the purpose of showing that, although a person might temporarily recover from an injury

* "Certain diseases give a peculiar tone to the circulatory system, enabling it *to bear*, and causing it *to require*, great loss of blood in their treatment; they are inflammations of the serous membranes and parenchymatous substance of organs. Other diseases induce this effect in a much slighter degree; such are the inflammations of the mucous membranes. Lastly, other diseases render the system unduly susceptible to the effects of loss of blood: these are the class of irritations, as gastric and intestinal disorders and irritations. Dr. Marshall Hall in the Gulstonian Lectures for 1842.

in which a portion of bone was allowed to remain an irritating substance to the brain, it did not follow that such recovery should be permanent. If there be a doubt on the mind of the surgeon whether there are or are not any portions depressed and irritating the brain or its membranes, he should wait; and in this it is that the real difference between modern surgery and that of the olden time exists with respect to adults." We are not quite sure that this is not better practice than trephining indiscriminately in every case of compound fracture with depression.

The following case supports, as far as one case can be considered to do so, this view.

Case.—"Captain R., aide-de-camp to General Sir L. Cole, received a wound from a musket-ball, at the battle of Albuhera, on the anterior and middle part of the left parietal bone at its junction with the frontal, which fractured it, causing some slight depression. He was rendered insensible at the moment, and was brought in the evening to the village of Valverde, where the insensibility was shortly followed by symptoms of inflammation, which were subdued by repeated bleedings, under which he gradually recovered, and remained well until killed at Pampeluna. The division of the scalp gave rise to no additional symptoms." 111.

Mr. Guthrie did not use the trephine, because the broken portions of bone did not on examination appear to press unequally on the dura mater, and it was presumed that the moderate degree of pressure which ensued from the depression might be borne with impunity, as it did not seem likely to be accompanied by the projection inwards of any pointed pieces which might irritate the brain. The result confirmed the supposition.

But the uncertainty that attaches to Mr. Guthrie's meaning will perhaps appear to others, as it does to us, from the passage which immediately follows the preceding. We supposed that Mr. Guthrie was treating of compound fracture with depression, that difficult and doubtful case in practice; yet the observations we shall quote seem to have reference to simple fracture.

"When a fracture is accompanied by depression, and the broken portion or portions of bone would seem to be driven into the dura mater or the brain, or to press so unequally upon them that as much mischief is likely to ensue from leaving, as from removing them, and especially in an adult or middle-aged man, less harm will in general follow from ascertaining the fact, by dividing the scalp, and removing the broken pieces, than by doing nothing, more particularly when the presence of a foreign body is ascertained. If there be no symptoms indicative of mischief below the fractured part, the surgeon must then decide, after the best estimate he is able to make of the probable evil which will occur from allowing the broken or depressed portions of bone to remain. I have already stated, page 104, that according to my experience an incision through the scalp renders the dura mater very little more liable to suppuration than it is without this; nevertheless that trifling degree of liability should not be incurred without an absolute necessity. I have now under my observation a child four years old who fell out of a window and has driven or bent in a portion of the frontal and parietal bones of the top of the head. The depression and fracture can be distinctly felt, but as there are no symptoms indicating any immediate mischief, there can be no reason for interference.

"I have said, page 102, that in young persons the brain will bear a greater degree of pressure and of irritation with impunity than it will in persons of

nature age, that by far the greater number of cases in which recovery has taken lace after fracture and depression of the skull with injury of the brain, and even ss of its substance, have occurred in children or in persons under the adult age; reater reliance may therefore be placed on the powers of nature in them, and less equent recourse may be had to the aid of operative surgery in order to pre- ent mischief than in adults, even when the bone is fractured as well as depress- d. 112.

Two cases are quoted, to be contrasted. The first was recorded in the ancet, by Mr. Roberts, of Bangor. It was that of a little boy, in whom e allowed a large piece of bone to remain depressed and forced perpen- icularly into the brain, and which appeared to him to be too firmly im- edded in it to admit of extraction. Several portions of brain were lost or emoved, the child suffered from convulsions, became paralytic on the pposite side to the injury, yet gradually recovered, three pieces of bone coming away in less than ten weeks.

The other case occurred to Mr. Liston. It was that of a boy eleven ears of age, who had been thrown out of a cart eleven weeks before, and ad his head cut in two places by a stone-bottle. The wound on the nterior superior part of the head was the most serious, and from this an angular piece of the bottle was removed. He was insensible for one week after the accident, but gradually recovered, and could walk at the end of a month. A few weeks afterwards he lost the power of speech for three days, which he recovered on a profuse discharge of matter taking place from the wound, together with vomiting. Three days after his admission into the University College Hospital, Mr. Liston examined the bone, and finding a fissure with some little depression, he applied the trephine, when two angular pieces of the inner table were found projecting much inwards on each side of the fissure, and were removed. The child did well. On these cases Mr. Guthrie remarks:

"In the first there was opening sufficient to allow of a free discharge of matter as it was secreted, and for the removal of all irregular-shaped pieces of bone. In the second the opening was not sufficient, and the irregular-shaped pieces of bone could not be removed. In the first case the trephine was unnecessary; in the second its use was imperatively called for, and it was successful." 113.

Mr. Guthrie makes a remark which appears to us a very just and not an unimportant one; it is this,—that the cases of recovery recorded bear a very deceptive proportion to the fatal cases that are not recorded. Few relate an unsuccessful one, in which either the post-mortem examination proves that something has been overlooked, or that the injury was beyond remedy by any means at present known. This makes calculations founded upon published cases so fallacious.

Some cases are given of fracture with depression and injury of the brain, in which modes of practice of a very opposite character were attended with an equally successful result. Such are the circumstances which abound in medicine, and render it difficult to say what is and what is not right to be done. General rules must be charily laid down and cautiously acted on, experience and judgment constantly stepping in to modify them. Mr. Guthrie's opinion is expressed decisively:—

"The result of my experience has rendered it imperative in my mind to remove

at once all portions of bone or foreign substances which may have or may be supposed to have penetrated the dura mater in adults, although no symptoms of compression should be observed; and generally in children, whenever it can be done without difficulty, and especially when symptoms of compression are present. If the wound in the dura mater should not be sufficiently large to allow the offending body to be extracted through it, the opening must be increased to enable it to be withdrawn without further laceration; and all substances which are irritating, or are likely to irritate the brain, should be removed in the first instance, as I have already suggested, page 92, unless the attempt should be forbidden by the occurrence of convulsions, by the inability of the surgeon to seize the extraneous body, or by the evidence of the great suffering which it occasions; and all blood which may be extravasated should be carefully and [illegible] removed." 117.

It appears, then, that it is the probability of wound of the dura mater, that leads Mr. Guthrie to operate. But in compound fracture with depression, this probability must be a frequent one, and therefore we may presume that the operation will be a common one. In fact Mr. Guthrie's practice comes very nearly, after all, to Sir Astley Cooper's in this instance, while the former seems to advocate the use of the trephine in simple fracture with depression to an extent to which most surgeons are indisposed, perhaps, to go. But we repeat that the want of arrangement in Mr. Guthrie's observations, and the mixing up of one subject with another, render it exceedingly difficult to say what his sentiments really are.

He goes on, for instance, to state:

"I have shown by the case of the soldier, p. 50, by that of Clayton, p. 70, of Capt. R., p. 111, and by others, that every depressed portion of bone accompanied by fracture, and especially on the back part of the head, need not necessarily be removed. When the fractured and depressed bone is accompanied by symptoms of compression in an adult, which continue after the usual antiphlogistic means and remedies have been employed in vain, and appear to increase rather than to diminish, the broken and depressed portion should be raised; for although the brain will bear and accommodate itself to pressure in many persons in a manner which could not be either foreseen or expected, it will not do so in all; and the removal of the bone offers the best chance for relief, whether the mischief has arisen from the pressure made by it, or occurs from the extravasation of blood beneath. I have on several occasions found the principal symptom of compression to be a fixed pain in the part; and although the state of the fracture and depression would not alone have rendered the removal of the bone positively necessary, I did not hesitate about removing it when this symptom was present; and I have generally seen the pain subside after the operation. The case related by Mr. S. Cooper, to which I have referred, p. 78, is most useful, from the fact which followed the removal of the bone, viz. that the patient, who was before in nearly a lifeless state, instantly sat up in bed, looked around, and spoke rationally. There was scarcely one of those great battles or sieges in the Peninsula at which I was present, where a nearly analogous case did not occur.

"The greatest discrimination is required in cases where the extent of the injury is not so manifest, and in which there is more room for doubt. In most cases in which a slight or moderate degree of fracture and depression of the skull has taken place, the symptoms of concussion are present as well as those of compression. The symptoms of concussion are however coeval with the injury; and although those of compression may take place almost instantaneously, they more usually occur at a later period of time. The symptoms of concussion may, nevertheless continue for days, and more particularly the insensibility, or that state which is approaching to it, complicating the case and embarrassing the

practitioner. In a child or young person the symptoms of compression or irritation, when they appear even at a secondary period, may pass away under further moderate depletion; but in an adult any undue delay in giving the necessary relief by the removal of the depressed portion of bone, will in general be destructive to the patient. It is the irritation caused by the depressed bone on the dura mater, and communicated to the brain, which gives rise to the unfavourable symptoms, and to the formation of matter which follows." 119.

This is merely reverting to matters which had been treated of and settled long before.

But to proceed. Our author arrives at secondary formations of pus.

Mr. Guthrie touches on the formation of pus within the cranium by a sort of *contre coup*.

"When a very severe blow, accompanied by a shock, as from a fall, has been received on the head, and the skull is so thick and strong as to be able to resist the violence thus offered without being broken, or is only slightly fractured, the vibration or *tremoussement* is directly communicated to the brain, giving rise to laceration or bruising of its structure in various situations, to the rupture and separation of the vessels of the dura mater from the bone to which they are attached, and to derangement of other parts, which will in all probability be followed by inflammation, and may even terminate in the formation of matter under the dura mater as well as above it, and even in the brain itself. This is said to take place by 'contre coup' when it takes place in any other part of the head than that which is struck, of which Mr. Shaw gives two cases: and of instances of which the older French authors are so profuse both in the explanation and in the fact. The cases related by Mr. Shaw are truly cases of laceration, the accompaniment and the consequence of concussion of the brain, and were not relievable by the art of surgery; but they are not exactly what the older surgeons particularly distinguished as injuries by 'contre coup,' where the blow was on one side, and a fracture took place or matter was formed in a circumscribed spot on the other, which cases did sometimes, although rarely, admit of relief by operative surgery." 120.

Mr. Guthrie, however, has not met with such cases unaccompanied by fracture. Nobody at this time of day would dream of making an exploratory crusade with the trephine.

Mr. G. observes that, as all well-informed surgeons are aware, when the periosteum covering the bone is bruised, or the bone is deprived of this membrane, it does not follow that the bone should die or exfoliate. In many instances the wound will gradually close up and heal as if no such accident had happened; and in most cases this termination will only be delayed by the separation of a scale of bone from its outer surface.

Mr. G. passes on to suppuration on the dura mater, and "Pott's puffy tumour." On this head Mr. Guthrie makes a remark which is not only, we apprehend, true, but easily accounted for. "Inflammation," he says, "of the dura mater proceeding to suppuration or the formation of matter between it and the bone, appears to have been a much more common consequence of injuries of the head in the time of Dease and Pott than at present. I have rarely seen a case of the secondary tumour they have described, and on inquiring of the surgeons of the different hospitals in London who are on the Council of the College of Surgeons, consisting of what may be called from their standing and position the *elite* of the surgery of London, I find it is almost equally unknown to them."

The fact is, that depletion and the influence of antimony and mercury are now so freely resorted to, that inflammation does not run a-head as it was let do in the days of Pott. Mr. Guthrie dwells on the frequency with which suppuration on the dura mater is accompanied by suppuration on the surface or in the substance of the brain.

He says :—

"Suppuration, or the formation of pus on the surface of the dura mater, is not, then, under the strictly antiphlogistic system of the present day, a common occurrence; and sufficient attention is not therefore paid to the evil which frequently accompanied it in former times, viz. suppuration on the surface and in the substance of the brain itself—the more usual cause of death in all these cases of fracture and depression which are left to the 'chirurgie expectante,' or that which has been too long delayed. On referring to the records of surgery from the earliest times unto the present moment, I find that the greater part of those who have died with fracture and depression of the skull, and whose cases are recorded, suffered from alteration of the structure or substance of the brain, and the formation of matter within it or upon its surface. I have seen and read of many cases of injury of the head without depression in which this termination ensued, as it might have done and has done from idiopathic inflammation without injury; but I firmly believe that it would not have taken place in a large proportion of those cases in which it occurred, if the present system of treatment had been pursued; or if the depressed bone had been raised to its level, and the irritation arising from undue or unequal pressure had been avoided. It must be admitted, however, that an internal part of the brain may receive such shock at the moment of injury, as well as an external part, that no treatment can arrest its progress towards evil, although the mischief may be delayed; and when the patient dies after four, five, or more weeks of alternate hope and of suffering, matter is found in some part of the brain where an injury was not suspected." 124.

Purulent matter may be deposited under, as on the dura mater, either in a circumscribed or in a diffused manner. The former may admit of hope—the latter scarcely can. Mr. G. touches on the incision of the dura mater, to evacuate blood or matter beneath it. He speaks favourably of the practice, which, however, is not to be lightly had recourse to. He says :—

"I have seen, on the removal of a portion of bone by the trephine, the dura mater rapidly rise up into the opening, so as to attain nearly the level of the surface of the skull, totally devoid, however, of that pulsatory motion which usually marks its healthy state; and an opening into it, under these circumstances, has allowed a quantity of purulent matter to escape, proving that the unnatural elevation of the dura mater was caused by the resiliency of the brain when the opposing pressure of the cranium was removed. I consider this tense elevation and the absence of pulsation to be positive signs of there being a fluid beneath, requiring an incision into the dura mater for its evacuation. It is a point scarcely if at all noticed in English surgery, although much insisted upon in France. It was not in the slightest degree understood at the commencement of the war in the Peninsula, and was one of those points which particularly attracted my attention." 126.

Mr. G. relates several cases of an unsuccessful character—(there are unhapily too many of *them*.) We shall mention the heads of a successful one.

Mr. Guthrie operated in a case after the battle of Toulouse. The dura mater rose up into the trephine hole, without any pulsation. He punctured it, when a considerable quantity of pus oozed out. The opening was en-

larged, and the flow of matter was daily encouraged, until it gradually diminished, and ceased with the formation of granulations and the drawing in and cicatrisation of the part.

"Sir Astley Cooper entertained the opinion of Mr. Hunter, that a wound through the dura mater was particularly dangerous, in consequence of the tunica arachnoides which lines it being a serous membrane; and that, if the inflammation which ensued did not cease at the adhesive stage, by the consolidation of the surface which covered the pia mater with that which lined the dura mater, a diffused inflammation would necessarily follow, which might spread over its whole extent. This theoretical opinion is fairly deduced from the state of analogous membranes, such as the pleura and peritoneum when wounded. I do not apprehend however that practically the diffused inflammation is found to occur in cases of injury of the head, so often as it might be expected; in consequence probably of the more equal pressure that is kept up within the skull than in the chest or abdomen; but if wounding the dura mater be a danger that ought to be avoided, if possible, as one of great magnitude, the risk run by doing so cannot be put in comparison with that which accompanies the continuous irritation depending on the presence of a spiculum of bone, which has passed through the dura mater and is also irritating the brain beneath. Sir A. Cooper supposed that the danger would be diminished if the pia mater were wounded also, as the brain would project and fill the wound; but I am not satisfied of the accuracy of this opinion; and if I had opened the dura mater through error or design, I should not think I had lessened the evil by adding to it a wound of the pia mater, and perhaps also of the brain." 128.

Mr. Guthrie turns to injuries of the brain, which, he observes, are less formidable to those accustomed to military warfare, than to civilians who see them on a less frightful scale.

Gun-shot wounds of the skull are next treated of. Mr. G. recommends the external wound being in general enlarged by a simple incision, so as to show the extent of the depression or the size of the fragments. Where the bone is scarcely injured, or the periosteum only bruised, or even where the bone is deprived of this, it does not necessarily follow that it should die, or even exfoliate. In many instances, the wound will gradually close in and heal, as if no such evil had occurred; and in those which do not terminate so favourably, the cure will only be delayed by the exfoliation of a layer or scale of bone from its outer surface, unless the mischief should have penetrated deeper, affecting the whole substance of the bone or even the parts beneath.

"A musket-ball," continues Mr. G. "striking directly against a bone sometimes makes a hole not larger than itself with or without any radiating fracture; and one trephine, if properly applied, will often embrace the whole of the mischief, and admit of the removal of the broken pieces. The trephine should be of a large size, and as a centre pin cannot be used, it may be made to turn very well in most cases in a flat but thick bar of iron, having a hole in the middle of such size only as will admit the outside of the polished trephine to turn in it. Sufficient support for the instrument will be obtained by this means until it has made a groove in the bone for itself, when the operation may be continued as it would be in an ordinary case after the removal of the centre pin. Botal and Percy both allude to contrivances of this kind as eminently useful, and I have myself found it very advantageous.

"When a musket-ball ranges along the side or top of the head, it may break the outer and depress and fracture the inner table to a considerable extent, for

the space even of three or more inches, of which the case related, page 105, is an example. I have almost always removed the broken portions of bone by means of good forceps and a straight saw, and have perhaps been as often successful as the reverse. I can see no reason for delaying the operation unless the case be doubtful, when it may be as well to wait for symptoms, as in the case above noticed. It sometimes although rarely occurs that a ball sticks so firmly in the bone that it cannot be extracted by working round it in any ordinary way, with a pointed instrument. The difficulty usually arises from the ball having half buried itself in the diploe, and so little of it being exposed, as not to admit of a firm hold being taken of it. The large trephine, used in the way I have just pointed out, has enabled me several times to overcome the difficulty. I have even found the removal of the outer table to be sufficient where the inner one has not been driven into the dura mater; but where any doubt is entertained on this point the two should be removed." 131.

A ball, or other foreign substance, may penetrate the brain directly or obliquely. When directly, it can seldom be removed, and the patient rarely survives beyond two or three days. Mr. G. has never had under his own care a case which did well after the removal of a ball, which had been deeply driven into the *anterior* part of the brain, though he has seen and mentioned several instances of recovery, where the injury had occurred towards the back part of the head, and the ball had been allowed to remain. He thinks it "better in all such cases to allow the ball to remain unmolested, which it will often do for many days, until circumstances render it necessary to endeavour to find it. When it can be felt immediately under the surface, it ought to be removed as a foreign substance, provided this can be done with little apparent inconvenience."

Passing over some cases, we find Mr. Guthrie stating that when a ball strikes the head obliquely, it may enter and pass out, or lodge. Most of these patients die. "When the entrance and exit of the ball are obvious and not far distant from each other, the splinters of bone should be removed; and if the little bridge between the openings should be injured, the whole should be taken away by the straight saw; an operation which cannot however be necessary in the first instance, if the portion of bone should be apparently sound."

Perhaps the best case referred to is that of Baron Larrey, though it is probably too favourable a sample to be an ordinary one.

Case.—A soldier of the 18th demi-brigade was wounded during the first revolt at Cairo by a musket-ball, which pierced the middle of the frontal bone near the longitudinal sinus, without injuring the dura mater, and passed backward between it and the bone as far as the occipital suture. The accident was followed by the usual symptoms of compression, the soldier, however, always complaining of pain at the back part of the head at a spot opposite to the entrance of the ball, I introduced a gum-elastic sound through the hole in the frontal bone along the track which the ball had made, until I discovered it by the resistance it offered to the further passage of the sound, and by the inequalities of its surface. Having thus ascertained the distance at which it was situated, I applied a large trephine immediately over the part by measurement; a quantity of pus was immediately evacuated, and I easily extracted the ball, which was depressing the dura mater and brain. The man after this recovered." 133.

A case, in some degree, similar, occurred to Mr. Guthrie, but the brain was injured in front, and the man died.

After the battle of Toulouse Mr. G. had a case in which the ball went through the bone and brain, and lodged under the scalp, which it could not penetrate. The man died.

A small ball is sometimes so flattened against the skull, as to escape detection. A soldier was wounded by a ball on the side of the head, which was not supposed to have lodged. The wound did not heal, a small opening remaining, although no exfoliation took place, and the bone did not seem to be bare. On dividing the scalp, Mr. G. found a small ball quite flat, which had sunk down a little below the hole left for the discharge it had occasioned.

When a larger ball or a piece of a shell strikes the head, the fracture is usually extensive, and portions of bone, or a piece of the shell itself, are often lodged in the substance of the brain. These cases are generally unfortunate.

A fall, particularly on the vertex, may, it is well known, separate the sutures, usually a fatal case. But "a suture may be separated by a musket-ball, which impinges with a moderate degree of force directly upon it, with less danger. It can only however happen in young persons in whom the sutures are not obliterated as they are in elderly ones, and in general takes place when the ball happens to lodge as it were between the bones concerned in the formation of the suture."

Case.—A heavy dragoon was wounded at the battle of Salamanca by a musket-ball in the body, which caused him to fall from his horse, and injured the top of his head. Little attention was paid to him until mischief was suspected from the lethargic state into which he fell, and which could only be attributed to the blow on the head, where a tumour was observable. This, on being divided, showed a separation of the edges of the sagittal suture, from which some blood flowed. Two crowns of the trephine were applied on the twelfth day, in order to admit of the free discharge of some blood which had been extravasated from a wound in the longitudinal sinus, after which the symptoms subsided, and the patient gradually recovered.

Mr. Guthrie has, in four instances, seen irremediable blindness occur in the following manner. A ball passes through the fore-part of the head from side to side, but it does not injure the brain, coursing immediately below it and through the back part of both orbits.

We have some cases of injury of the frontal sinus and remarks upon them.

"The danger of injuries to the frontal sinuses has been greatly exaggerated and vanishes in a great degree, when attention is paid to their structure. The uncertainty of the depth of the cavity between the tables of the bone and the irregularity of the exposed surface of the inner table, which may through carelessness be mistaken for depression, should be remembered. Larrey relates the history of two cases of fracture from musket-balls which he treated with success in the campaign in Egypt and Syria without leaving any aërial fistula, by the application of a large crown of the trephine on the exterior table, so as to expose the inside of the frontal sinus, when a smaller instrument was readily applied, so as to enable him to raise the depressed or broken portions of the inner table; a practice which ought to be imitated in all such cases which require the operation of the trephine." 136.

Case.—A soldier was wounded by a ball, which struck him on the lower part of the right side of the forehead, fracturing the external wall of the frontal sinus. On examination, the ball could be felt lodged in the sinus, from whence it was readily removed by enlarging the opening, and the man recovered without any bad symptoms. Le Dran gives a case in which a ball having entered in this way, was found a year afterwards lodged in the brain by the side of the sella turcica.

Mr. Guthrie has never seen a case in which, after wound of the frontal sinus, the air did more than raise the cicatrix, though he has often had difficulty in closing the external opening.

Mr. Guthrie relates some cases of injury of the brain, by foreign bodies which reached it through the orbit. Perhaps the following is as good an instance of the insidious and dangerous nature of these accidents as any.

Case.—"A boy, nine years of age, was brought to the Ophthalmic Hospital struck by his playfellow with the end of a thick iron wire on the right eye, which blackened it. There was no external wound; but as there was some bloody chemosis at the upper part and inside, there was a probability of the wire having penetrated deeply, although the opening could not be discovered by the probe. The accident had happened two days before, and the boy had vomited shortly afterwards, and had eaten little since, although he did not think himself ill. He was well purged, and cold water was desired to be applied externally. Two days after he returned, complaining of sickness, headache, and some pain over the brow, and looked ill. It was now suspected that the instrument had penetrated into the brain, although the ecchymosis was in a great measure gone and the eye was unaffected. He was bled freely from the temple of that side by leeches, and calomel and jalap were given him so as to act fully. He did not attend the next or fifth day, but on the sixth his mother came to say he had been very ill, and delirious and restless all night. On going to visit him, he was found stupefied, answering with difficulty and incoherently; pulse very quick, skin hot and dry, with some convulsive twitches of the face and arms; pupils slightly obeying the influence of a strong light, but not dilated. He was again bled freely from the temple, but his breathing became more difficult, he fell into a comatose state, and died in the night. On examining the head, the stiff iron wire was found to have passed under the upper eyelid between it and the eye, through the posterior part of the orbitar plate of the frontal bone and into the anterior lobe of the brain, which was softened at that part, and bedewed with a little matter." 137.

Cases of this description, and they are not *very* rare, are calculated to inspire caution. It would have been well not to have suffered this boy to attend as an out patient. Had he been more closely watched, his chance might have been better. An injury of the longitudinal or lateral sinuses, which allows the blood to escape freely, is accompanied with little danger. But it is very fatal when the blood is permitted to accumulate.

Mr. G. makes some remarks on what is called fungus cerebri. It is of two kinds, and occurs at different periods of time. The first kind is principally composed of coagulated blood, usually appears immediately after, or within two days after the injury, and is generally fatal. The second takes place at a later period, and is formed for the most part of brain. They seldom occur either where the loss of skull has been great, or where, with a small opening, the dura mater is uninjured.

In the first kind of protrusion the dura mater must necessarily be torn

to some extent, and the tumour which comes through it is of a dark brown colour, glazed and covered in general by the pia mater. These protrusions were accompanied, in the cases that Mr. G. has seen, by symptoms of inflammation of the brain and its membranes, coma not occurring till near the fatal termination. He has seen the protrusions torn off, and was able to satisfy himself "that they all arose from hæmorrhage into the substance of the brain, probably immediately below its surface, which became augmented in size as the inflammation proceeded, and was gradually protruded at the part where there was the least opposition. When the tumour was torn off little hæmorrhage ensued, but a dark brown bloody cavity was seen in the substance of the brain; or when cut off and examined, the protruded part seemed to be covered by the pia mater, with or without a layer of cerebral matter, and was made up generally of coagulated blood." Mr. G. never saw a case recover. He feels disposed to recommend that "all such bloody tumours should be cut off on a line with the surface of the skull as soon as they appear above it, or that they be removed altogether, so as to allow of a free discharge of blood or of any fluid which may be collected under the dura mater. Blood cannot be drawn under these circumstances in any other way so well as from the surface or the substance of the brain itself, and a free discharge for any matters which may be collected beneath the bone is essential to the safety of the patient." The general treatment should be that of inflammation of the brain, of which this must be looked on as a symptom.

In the second kind of protrusion, which occurs when the active inflammatory symptoms are declining, Mr. G. is convinced that the tumour is formed by the substance of the brain, though he is *not* convinced that the loss of brain is invariably proportionate to the extent of the protrusion. He thinks that as the precise quantity which a person may lose with impunity has not been ascertained, it may be as well to deprive a patient of none, provided its removal can be dispensed with. In one of some cases the nitrate of silver was lightly used—moderate pressure is the remedy advised by Mr. G. The pressure, he states was graduated, according to the feelings of the individuals; when made too firmly it gave rise to swimmings and pain in the head, retardation of the pulse, a sense of sickness and fainting, and even in one instance to syncope. Pressure could only be borne when very lightly applied whilst the protrusion was increasing, but could be gradually augmented when it became stationary, and during its diminution and secession. The pressure was continued until after the wound had healed. Mr. Guthrie observes:—

"The preceding cases prove that persons may recover after having had a protrusion of the brain, without, as well as with the loss of a portion of its substance, the difference in all probability between the cases being dependent on the degree of mischief which gave rise to them. In all those which I had an opportunity of examining after death, and the injury in all was on the top or upper part of the sides and back of the head, the protrusion was manifestly a part of the substance of the brain, and firmer than the hemisphere beneath, which was soft, pulpy, and of a yellow and sometimes of a reddish colour, the lateral ventricle being filled with a sero-purulent matter, pus itself being spread over the surface and intermingled with the pulpy structure, into which the brain had been changed. That the protrusion was the consequence of low inflammation of the brain, there could be no doubt; and the greater caution had been

necessary during the progress of the mischief than had been enforced, was in all probability the fact. It was the observation of this and of other circumstances not less important which led me to enjoin that rigid system of management which I have insisted upon in all cases of injury of the head. There can be no doubt of the formation of many of these protrusions being aided by the opening which has been made in the dura mater, which would have restrained their growth if it had been sound. The dura mater should never therefore be opened if it can be avoided, and the protrusions thus formed are the most likely to be withdrawn as the irritation which gave rise to them subsides." 144.

Mr. Guthrie, like most modern surgeons, is averse to excision. There are some remarks on abscess of the liver, consecutive to injury of the head, an affection which probably only follows such injury as it may any other.

"When a person has received a serious blow on the head, which has given rise to an exfoliation of the bone, or to a very slight depression of the skull, he is rarely restored to his previous healthy and natural state. The scalp adheres firmly to the bone beneath instead of sliding loosely over it, and a deep hollow is formed, which would imply that greater mischief had been done, and a greater loss of bone had been sustained than actually took place; and this is the more remarkable when pieces of bone have been removed. I have now under my care, for diseases in other parts, Major D of the Indian Army, who was wounded on the left side of the forehead at its upper part by a musket-ball at the assault of Mahidpoore. Several pieces of bone were removed, and the pulsation of the brain was evident in the discharge. I can push the point of my little finger into the hole left by the cicatrisation of the wound to an extent I should not have suspected if I had not been aware of the fact. This officer suffers from headaches, augmented or brought on by any exertion of body or mind. He cannot bear exposure to the heat of the sun. He can scarcely drink three glasses of wine without feeling its effect. In all these cases, and I could relate many, of persons of education, they can bear no great exertion of any kind. They fall down under exposure to heat. They are easily inebriated, rendered furious by a small quantity of liquor, and often become stupified, comatose, or even die suddenly. In addition to these evils, which may be avoided by care, many are subjected to fits, which are apparently epileptic; and others suffer from such intolerable pain in the part injured, as well as in the head generally, as to be rendered miserable and desirious of seeking relief at any risk.

"These injuries are often accompanied during their progress by mental defects which time does not always remove. The memory is very often much impaired. It is frequently defective as to things as well as to persons. The sight of one or both eyes may be impaired, or even lost. Ptosis, or a falling of the upper lid, is not an uncommon although a more curable defect. Speech is not only difficult, but the power of uttering certain words is often lost; a language is occasionally for a time forgotten, and a sort of conventional one has even been adopted, in the manner mentioned by Sir A. Cooper, the Baron Larrey, Sir B. Brodie, and in the case related by Dr. Hennen, which was under my own observation. The more serious evils which befall these unfortunate sufferers are aberrations of mind, rendering some degree of restraint necessary, or a state of fatuity, which is not less distressing. These intellectual defects are often accompanied by various states of lameness and debility, from which there is but little hope of recovery." 150.

We have now presented a very full account of this interesting volume. The practical surgeon will find it of great value, and reference will often be made to its facts. We trust that a long career of usefulness is still open to its author.

THE CAUSES, NATURE, DIAGNOSIS, AND TREATMENT OF ACUTE HYDROCEPHALUS. A Prize Essay. By *James Risdon Bennett*, M.D. Octavo, pp. 248. Highley, 1843.

WE always open a new work upon consumption, cancer, water in the head, or other deadly disease, with a melancholy interest, anxious yet scarcely expecting, to discover some new means of compassing our great antagonist, and forcing him from these strongholds; and we usually close it with vexation at finding that the number of our implements of warfare is not augmented, although the system of tactics may be varied, while means are too often held forth as panaceæ with a confidence and appeal to facts which is startling and would prove convincing, had not a bitter experience engendered an incredulity, only to be removed by a rigorous demonstration, repeated under every variety of circumstances. The present work professes no such discovery, and, indeed, one of its chief claims to the very favourable notice we feel called to bestow upon it, is derived from the spirit of careful discrimination, and the absence of hasty generalization which pervade it throughout.

Dr. Bennett, having become a long time since aware that very vague and contradictory opinions prevailed respecting this important disease, resolved, when the London Medical Society proposed its consideration as the subject for the Fothergillian Gold Medal for 1842, to submit his own and other's experience to an impartial examination, with the hope of reconciling some of the inconsistences and illuminating some of the obscurities. And in this we think he has succeeded.

The work is divided into seven chapters, each of which we will now submit to analysis.

CHAP. I.—VARIETIES OF THE DISEASE AND ORDER OF THE SYMPTOMS.

The author truly observes that much of the obscurity in this affection has arisen from the adoption of the same name for the designation of very different conditions of disease. After enumerating, in a very distinct manner, the various *premonitory symptoms*, both those referable to the condition of the digestive organs, and those arising more directly from the altered condition of the nervous centres, he proceeds as follows:

"For my own part, I have been led to consider the very marked change from the natural aspect and expression of countenance, the listless, vacant expression of eye with the dark line beneath, and a constipated state of the bowels, with evidence of deficient action of the liver, when associated with any of the above symptoms more directly referable to the brain, as calling for very great watchfulness on the part of the medical attendant, and as justifying serious apprehensions of the invasion of hydrocephalus; and I entertain a strong conviction that judicious treatment in such circumstances often prevents the accession of dangerous cerebral disease. * * * * *

"I cannot avoid urging on the attention of the reader the great frequency of derangement of the liver and an inactive state of the bowels as preludes to hydrocephalus, and the manifest propriety, in suspicious circumstances, of not merely adopting occasional and temporary means for the relief these symptoms, but of giving them the most serious and continued attention." 11.

Dr. Bennett describes four varieties of genuine hydrocephalus.

"*Of the First or Gradual Form.*—The nervous of Hopfengartner, the nervous and ataxic of Breschet, the ataxic of Guersent, and the third and fourth forms of inflammatory diseases within the head as described by Abercrombie. This, although the more chronic, is the more frequent form under which what is called acute hydrocephalus is met with in practice; and it is on many accounts the most important, though the least understood by the older nosologist."

The *premonitory symptoms* may exist for weeks or months before the disease becomes fully developed, but a post-mortem examination proves to us, by reason of the extent of the changes which have taken place, that these symptoms must sometimes be considered rather as attendant upon actual disease, existing in a chronic degree, than as merely premonitory. The early symptoms are especially liable to be overlooked or misinterpreted, if the child be recovering from some previous debilitating disorder or if frequently ailing from a sickly and delicate constitution. They are frequently attributed to mere gastric fever or worms, and, in some cases, bear no distinct reference to the head until near the termination of the disease. When the *headache* appears it is frequently confined to one part of the head, and is usually marked by sudden paroxysms, producing shrieking. Sometimes the child is continually moaning, keeping its hand to the head, and uttering such plaintive and peculiar cries, that Coindet considers the hydrocephalic cry to be in some measure diagnostic. When spontaneous *vomiting* occurs the case becomes more clear, and both this symptom and the headache are increased by motion and the erect posture. They are usually preceded by chilling and flushing of the face, for a day or two before, but, as a general rule, the child's face is pale, unless exertion produce a transient flush. The *pulse* is usually frequent, and often somewhat sharp, but very excitable and variable. Dr. Bennett is not disposed to deny that it may occasionally be found natural or slow, at this early period, although the latter characteristic is more frequently found towards the termination of the disease. The temperature of the *skin* is seldom much increased, and may be diminished. It is harsh and dry, especially about the nose and lips, as noticed by Gölis. Tongue furred, breath very offensive, bowels constipated or irregular, urine scanty, turbid, and variable, but furnishing no characteristic appearance.

The various symptoms of what is termed the *first stage* of the disease, denoted by the tossing the head upon the pillow, sensitiveness to light and sound, knitting of the brow, contraction of the pupil, screaming, &c. may last for ten, twelve, or fourteen days, when they pass into the somnolent and convulsive stage. What is termed the *third* stage seems merely an aggravation of the second, while, in many cases, it is difficult to make out the division of the disease into stages at all, owing to the endless variety in the order in which the symptoms may occur.

"It is important, however, to distinguish between the symptoms which may be fairly attributed to excitement of the brain, to exalted action; and those which indicate an oppressed condition of the sensorium and torpor, or obliteration of its functions; or, in other words, those phenomena which indicate more or less complete coma. For, these latter symptoms, in all cases, I believe, must, to a certain degree, be attributed to the *effects* of previous morbid action, whatever may be its nature." 21.

2. The *Second* form is termed the *Insidious*, and by its insidiousness chiefly differs from that already mentioned. Dr. Abercrombie has particularly described this variety, and the author agrees with him in assigning a little above puberty as the age at which it most frequently occurs, although, it is sometimes found between seven and ten. It commences as a common febrile attack, and the patient may suffer from remissions and aggravations for some weeks before the headache becomes very constant, when, although not severe, it is now accompanied with a sense of oppression, and unwillingness to be disturbed.

"These symptoms, on inquiry, it is difficult to account for: the pulse at the same time being almost natural, having lost the frequency it may have had previously, and the tongue being clean, and the appetite improving. The symptoms of general disturbance do not, however, accord with the permanence and amount of headache. In this way several days more, or, I should say, even a week or two may elapse, when the headache increases with an evident tendency to stupor, and with a falling of the pulse, and then the disease becomes fully developed. In infants the symptoms in the early stage are sometimes so trifling that no alarm is taken till the child is in a state of stupor, which soon lapses into coma, generally attended by squinting. In some of these cases Dr. Abercrombie observes, there is still less appearance of disease of the head, and there is not the slightest complaint of headache through the whole course of the complaint." 23.

3. *The Acute, Febrile, or Inflammatory Form.*—In this, the symptoms may be subacute, when they much resemble the first form, or they may, in other cases, be hyper-acute, occurring without any premonitory symptoms. Dr. Cheyne's admirable observations are quoted by the author.

4. *Consecutive or Secondary Hydrocephalus* supervenes on the subsidence of some other disease. This is a very acute form, and if not promptly met rapidly proves fatal.

"I would not class under this head cases that occur during, or subsequent to dentition, nor those which attend the termination of, or succeed to, chronic affections, particularly of a scrofulous character. Most of these, I believe, are as much entitled to the denomination of idiopathic as any form of the disease. It is chiefly on the subsidence of acute febrile disorders, and particularly after scarlatina, that the cases occur to which the form *secondary* appears to me strictly applicable. If we were here considering the disease as occurring to adults as well as to children, to the cases I have mentioned should be added those which supervene on acute disease of the liver and kidney. Keeping in view this limitation of the term secondary hydrocephalus, it will be found generally to present much of the violent character of the third variety. The face, however, is generally pale, the pulse quick, the secretion of urine scanty; and particularly after scarlatina, there generally is, or has been, more or less anasarca. Headache, though sometimes not much complained of, generally precedes all the other cephalic symptoms, and is often almost the only one indicative of the approach of the disease. * * It is to this variety of the disease that the term water-stroke is most applicable, and I quite agree with Dr. Copland, that it hardly ever occurs in a strictly idiopathic form." 27.

Pseudo-Hydrocephalus.—Under this head Dr. Bennett reviews the various forms of head-affection likely to be confounded with genuine hydrocephalus.

(A.) *The Hydrocephaloid Disease.*—Dr. Bennett contents himself with referring to the valuable lessons of Abercrombie, Hall, and Gooch, agreeing with the latter, that causes of prior exhaustion, supposed by Hall always to be present, are not so necessarily though usually. "Such changes in the circulation are, no doubt, the most frequent and important causes of the functional derangement, of the altered vital properties of the brain; but alterations in the quality of the blood, in the nutrition of the brain, may equally induce the state of things described by Dr. Hall and his fellow observers. Hence, defective nutrition of the body, and an imperfect supply of the other vital stimuli, particularly of light and air, may, by first inducing a state of irritation, eventually induce congestion, or the symptoms stimulating hydrocephalus; and I think I shall be borne out in the statement, that it is in debilitated, weakly children, and chiefly those of the poor, that the hydrocephaloid disease is seen, except where it manifestly succeeds direct exhaustion." He agrees with Evanson and Maunsell that *squinting* is very often present in this affection, as it often is in slight and temporary derangements of the brain in delicate children, who are suffering from derangements of the biliary secretions, and gives rise to unnecessary alarm.

(B.) *Erethism, or Irritation of the Brain in Infants.*—This is a condition of the brain, described by Dr. Nickoll, "in which inordinate effects arise from ordinary impressions on different parts of the nervous system," and which often resembles the first stage of hydrocephalus. It occurs especially in scrofulous children, and is frequently produced by the irritation arising from painful dentition, worms, disordered secretions, burns, ulcers, surgical operations, &c. As it is accompanied by encreased determination to the head, and unpreceded by causes of exhaustion, it is more likely to be mistaken for hydrocephalus than it is the hydrocephaloid disease itself. If it be treated by antiphlogistic means, exhaustion and fatal effusion will supervene, while, if the causes of irritation be removed, the sources of excitement excluded, and mild sedatives administered, recovery soon takes place.

(C.) Children are subject to a state of the brain which may be termed *Torpor*, manifested by a very unexcitable state of system, and coming on slowly in the course of a prolonged and debilitating illness. Dr. Bennett has found it connected with a vitiated state of body, requiring a prolonged course of tonics, especially iron. It occurs under the same circumstances as erethism, and the difference of effect must result from the great difference of nervous constitution in the individuals.

CHAP. II.—STATISTICS OF HYDROCEPHALUS.

Dr. Bennett but expresses the general feeling of the profession when he acknowledges the great obligations due to Mr. Farr, for his labours in the important field of medical statistics. It is from these chiefly that the present chapter is compiled.

1. *Frequency of the Disease.**—In the half year, to which the first Report of the Registrar General relates, there died 78,487 under 15 years of age, of which 3,570 were from hydrocephalus, or more than 4½ per cent. In the year ending June, 1839, there were 155,406, deaths under 15, and of these 7,672 were from hydrocephalus, or nearly 5 per cent. According to the last registration, ending June, 1840, there were 169,675 deaths under 15, and 7,769 were from hydrocephalus.

2. *Influence of Season.*—Great difference of opinion prevails upon this point, for, while Guersent states he never met with a case in the burning heats of Summer, other authors state that it is more frequent at that season than in Winter. Extracts from the Registrar's Tables are adduced by Dr. Bennett, as proving the great predominance of the number of deaths from this cause in *Winter*, compared to Summer and Autumn. He believes, also, from the fact of cases of hydrocephalus seldom occurring singly, but becoming frequent at certain periods, and then disappearing for a while, that the meteorological condition of the atmosphere must have considerable influence.

3. *Influence of Climate.*—This section is almost a misnomer, seeing that it merely alludes to the comparative prevalence of the disease in large cities and rural districts of the same climate. The conclusions at which the author has arrived, from the examination of various tables, are thus expressed.

"Whence it appears that the deaths from hydrocephalus in the metropolis are nearly treble those of the south-western counties, and more than treble those of the counties of Norfolk. &c., and nearly one-third more than those of the twenty-four town. Now the difference, it must be observed, in the gross mortality of the metropolis and the agricultural districts is by no means so great as this, being only about two-fifths more. The difference of mortality in the whole class of nervous diseases in towns and in the country is greater than in most other classes, and considerably greater than in diseases of the respiratory system, which, of course, includes pulmonary consumption." 52.

Dr. Brigham states that, while in the last thirty years the population of New-York has only quadrupled, the deaths from inflammation and gropsy of the brain have increased twelve-fold. In Boston "the population in 1790 was 18,038 with 201 square yards to each inhabitant; and in 1837, 80,325 with only 49 square yards to each person. The increased density, therefore was as 5 to 1; and, while the mortality per 1000 from apoplexy and convulsions remained nearly the same, that from hydrocephalus was more than trebled."

4. *Influence of Sex.*—Most writers state the disease to be most frequent in females, but the tables here quoted prove quite the contrary; and this becomes the more observable when a comparison is instituted with respect

* Fully as we appreciate the benefits derivable to the science of medicine from the Death's Registration Act, we must consider it as but an imperfect measure, until means are adopted for ensuring a more accurate statement of the cause of death being delivered to the assistant registrars, than takes place at present. In the great majority of instances a medical man has been in attendance prior to the death, and a certificate from him should always be required.

to other diseases. Thus, in the report for 1838, (*e. g.*) 4,242 males and but 3,430 females are registered, while in hooping-cough there were 4,036 deaths of males and 5,071 females; in consumption, 27,935 males, and 31,090 females. "So that, while consumption appears to be 8 per cent. more fatal to females than males, hydrocephalus is 20 per cent. more fatal to males than to females. Diseases of the nervous system in general are 23 per cent. more fatal to males than to females, and the chief difference appears to arise from the disease affecting children, of which hydrocephalus is a striking illustration."

5. *Influence of Age.*—Of 265 cases, 182 occurred under the age of 7, while only in 46 did it exceed 10, and the number of cases under one year is very small. The disposition to the disease is greatest between 2 and 7.

6. *Duration.*—Of 117 cases collected by Green, 80 or nearly two-thirds, terminated within the first fortnight, and only one-eighteenth exceeded three weeks. Of 15 related by Schweninger, the mean duration was 17 days. Of 28 cases by Gölis, 18 terminated within the first fortnight, and only two exceeded 20 days. Dr. Bennett's experience coincides with the above, and he states the disease seldom extends beyond three weeks.

CHAP. III.—MORBID ANATOMY.

Almost every author of note has related cases (few in number it is true) in which effusion of fluid has been the only discernible result of acute hydrocephalus—it being totally unaccompanied by marks of inflammatory action.

Although after acute hydrocephalus the whole substance of the brain is usually found softer, yet it sometimes retains its healthy firmness. A very frequent change is a greater or less degree of *local softening of the white central portions*, usually accompanied by effusion, but at other times existing without any. A coincident inequality of thickness, and deep blue colour, of the cranial bones are often observed. This central softening is the most frequent of all changes in hydrocephalus. The serum is usually limpid and quite clear. When, however, the softening is very great, the examination delayed, or clumsily performed, the fluid often becomes turbid, owing to the commixture of the previously clear fluid with portions of the softened cerebral matter; and this turbidity is erroneously supposed to arise from the presence of coagulable lymph, pus, or some of the products of inflammation.

Dr. Bennett enters into some detail to prove from analogy the correctness of the suggestion of Andral, that this central softening is not necessarily inflammatory, but "a specific alteration of nutrition which may supervene under the influence of morbid conditions widely different from each other." He thus concludes—

"Finally, I would observe, and it should not be forgotten, that, as the softening of which we are speaking is often, or rather generally unattended by any of the physical characters of inflammation, so it is often seen in cases that have not

manifested during life any symptoms of inflammation, and that it frequently occurs in circumstances opposed to the supposition of inflammation being its cause. In hydrocephalus, it is true, it is often seen in those cases in which the symptoms have been of the most acute character, and in which, if they have been really attributable to inflammation, it must be considered as of an acute, and not a chronic character, and yet we find none of the ordinary effects of acute inflammation that has lasted for many days. But even in the simple cases followed by effusion only, the symptoms during life sometimes so closely resemble those attending inflammation within the head, that they are with difficulty distinguished; yet we know that many of these cases are the result of mere irritation, or of direct exhaustion of the system. To the hygrometric properties of the brain, already referred to, it should also be remembered, we must refer many of the cases of central softening found after death; for it has been fully proved, by Dr. Paterson, that the parts nearest to the cerebro-spinal fluid are the first to manifest pseudo-morbid softening after death: and there can be very little doubt that many of the reported cases of softening from disease have been nothing more than instances of this. The period after death at which the examination takes place is not always mentioned, nor taken into consideration as it ought to be." 90.

The quantity of *fluid* found in hydrocephalus is very variable, and in no wise proportionate to the severity of the symptoms; and it is now generally admitted that its quantity, and its existence at all, are of comparatively little consequence. The normal quantity also which should be found in the ventricles may become increased, when any circumstance, offering impediment to the cerebral circulation, has existed prior to death. "As a general rule, the more acute the disease the less water will be found, and *vice versa*." There is generally more also found in these cases of affection of the central parts of the brain than where the membranes are inflamed. Dr. Bennett's experience agrees with that of Nasse, "that, *cæteris paribus*, the younger the child the higher the average quantity; but that the amount seldom exceeds ℥vj. in cases having any claim to the title of acute, and is not usually above ℥iij. or ℥iv." Guillot has proved by his experiments that the brain can take up by imbibition a quantity of water equal to its own weight, and thus we sometimes find the ventricles empty, but enlarged in size, from former distension. Effusion beneath the arachnoid does not usually co-exist with the ventricular, which is attendant upon central softening, and this membrane is often found preternaturally dry.

In a large proportion of cases of acute hydrocephalus, more than one-half, meningitis is present, and contrary to what occurs in adults, the base is the seat of it far more frequently than the convexity. When it is confined to the convexity the ventricles frequently contain no fluid, while it is seldom we find meningitis of the base without effusion into these cavities.

The frequent association of meningitis with more or less inflammation of the substance of the brain, and the effusion of fluid into the ventricles, has led many authors to describe hydrocephalus as a mere cephalitis of children. But, if we omit the cases of central softening, already alluded to, we shall find, in this disease, marked inflammation of the substance of the brain in but a small number of cases, although its cortical surface is not unfrequently affected from extension of the meningeal inflammation.

Bloody points are often unusually frequent within its substance, whether

meningitis is present or not. The consistence of the brain is sometimes less, sometimes greater than ordinary. In connection with the inflamed condition of the brain, there may be the same central softening, with a limpid condition of the fluid of the ventricle, and the absence of all marks of an inflamed state of the membranes lining this cavity, already adverted to.

But there is another class of cases in which there is "undoubted evidence of inflammatory action *within* the *ventricles*, *e. g.* effusion of fibrine or pus, and changes in the serous membranes lining these cavities, evidently resulting from inflammation. These cases are, for the most part, associated with inflammation of membranes of the base." The turbid appearance of the fluid, in these comparatively very rare cases, forms a great contrast with its clear and transparent state in so many other cases of hydrocephalus.

Dr. Bennett next describes the various indications of *scrofulous action*, found after death, in conjunction with the appearances proper to hydrocephalus. In some subjects is found effused by the membranes a yellowish gelatinous substance, frequently containing caseous deposit, and intermediate in texture between fibrine and tuberculous matter. It is often seen at the base of the brain, but here, simple serum effused into the meshes of the pia-mater, until cut into, often presents the same appearance. In other cases, decided tuberculous matter is deposited in layers or patches, varying in size and consistence, or, again, as solid masses imbedded in the substance of the brain. Again, granules or miliary tubercles may be observed, singly or in groups, situated on the pia mater. The modern French pathologists, considering these as scrofulous, and associating with them the symptoms of hydrocephalus, have named that disease tubercular meningitis. Dr. Green has taken great pains in making these opinions known in this country; but, with us, they have received but little confirmation, so that, as Dr. Bennett observes, this form of the disease is probably less frequent here than with our neighbours, and that it is little else than a mere assumption to regard these granules as of a scrofulous nature. Still, the very general admission of the connection between scrofula and hydrocephalus, renders it a matter of surprise and regret that the other organs of the body have not, in cases of hydrocephalus, been more frequently examined in reference to this point. Of 30 cases examined by Gerhard, 29 presented tubercles in some important organ, as did 18 out of 20 cases examined by Green. Of 20 cases reported by Schweninger, the lungs were affected in 15, and the bronchial glands in 17. It is only quite in recent times that these latter organs have been submitted to examination at all. The alterations in many of the abdominal viscera, even when not consisting of positive tubercle, are, usually, as reported by various authors, of a scrofulous character.

CHAP. IV.—ÆTIOLOGY.

Of the *Predisposing Causes* the condition of the brain in infancy is a principal. From the first to the seventh or eighth year its activity of growth and function is continually augmenting, as is its density of structure.

The influence of various remedies also show these to be peculiarities at this age. Thus, opium requires the greatest care in its administration, while the system is notoriously insensible to the specific action of mercury, which nevertheless acts admirably as a purgative. Mere excess of nutrition of the brain may predispose; and, where there is great functional activity and susceptibility, the circulation through the organ may easily become disturbed by irritation at the peripheral extremities of the nerves, and, that it often is so, the effects of difficult dentition, the presence of worms, or a disordered state of the secretions of the canal, sufficiently prove; and the repetition of such irritation continually increases the predisposition to cerebral disease. The danger of encouraging the intellectual exertions of precocious children is known to every medical man. Operating upon this state of the brain, the changed constitution of the blood, from a depraved condition of the assimilatory organs, must be taken into consideration. Dr. Bennett attaches great importance to the influence exerted by the disordered state of the biliary secretions, so frequent in young children. But it is to *scrofula* as a predisposing cause that he especially directs attention; believing that, although the connection between the diseases has been pointed out by some of our best writers, yet this very important fact is either not generally admitted by the profession, in this country, or has not received the consideration which it deserves."

Exciting Causes.—These are often obscure. Among them may especially be mentioned external violence, as from falls or blows; but the influence of these is often lost sight of, by reason of the very long period that may elapse before the effects manifest themselves. Violent mental emotion, as from severe fright, has often produced the disease. The influence of other diseases is considerable: thus, fatal effusion may attend pertussis, the gastro enterite of weaning, and the phthisis of children. Suppression of evacuations and of discharges, especially when existing about the head and ears, and the disappearance of the exanthemata may induce it. The influence of cold is also very considerable, and this is very important to remark; for, a practice of keeping young children's heads inordinately cold, has, of late, been substituted for the opposite error of maintaining them far too hot.

"The evidence throughout all climates is uniform in regard to the influence of cold in favouring cerebral congestion, the frequency of which increases with the diminution of temperature. In Holland, Rome, Turin, Paris, and in this country, taking the average of a number of years, it has been clearly ascertained, that, in respect to the frequency of cerebral congestions, Winter is the season that stands first in order. Sudden transitions from one extreme to another have also been found to be attended by an increased frequency of the same disease. The conclusions derived from the tables I have already given, show that hydrocephalus also is more frequent in the colder months than in the hotter." 13.

Many wretched mothers induce this disease in their children by administering to them narcotic drugs and spirituous liquors.

CHAP. V.—PATHOGENY.

The author comments upon the extraordinary statement of Gölis, that he had found the organic products of inflammatory action in 180 cases. As this is so contrary to the experience of every other observer, he considers he must have often mistaken the infiltration of the arachnoid, and the turbidity (accidental) of the fluid of the ventricle for these. Localities, however, seem to have much effect upon the nature of the disease; for, while Dr. Clark's practice principally recognised a highly inflammatory description of disease, the experience of the Parisian hospitals seems to relate chiefly to a scrofulous variety. The conclusions the author arrives at are as follow:

"1. That in many instances the disease consists simply in *inflammation of the brain and its membranes;* the symptoms and the post-mortem appearances varying accordingly as the inflammatory action is seated primarily in the substance of the brain, or in the meninges, and according as it is more acute or chronic; and that in some of the most acute forms, rapidly terminating in death, little or no effusion may be found.

"2. That in by far the largest class of cases *the disease is essentially the result of scrofulous action*, and may, or may not, be attended by the signs of inflammation; that the most characteristic lesions in these cases are softening of the central parts of the brain and the effusion of serum; but that meningitis, chiefly of the base, is a very frequent secondary lesion, and is usually of a manifestly strumous character; and that, therefore, in this, the largest and most fatal class, acute hydrocephalus is but a modification of scrofulous disease."

He explains himself more fully upon this point in another part.

"The conclusions, therefore, to which I have been led, are—That vital changes in the brain, chiefly in the central white parts, of the character probably of turbercular degeneration, are the primary causes of the simple forms of hydrocephalus: and that softening, effusion into the ventricles, and meningitis, are all consequences of antecedent alterations of nutrition:—That in some cases derangement and suspension of the cerebral functions may be induced, and lead to a fatal termination, either previously or subsequently to the occurrence of effusion, and, *à fortiori*, before any inflammatory action has been set up:—That in other cases it is the secondary inflammation which is the immediate cause of death, and that this inflammation generally partakes of the original scrofulous character of the disease, as manifested by the various forms of tubercular deposition by which it is attended:—That in other cases the scrofulous nature of the disease is intimated by the presence of distinct tubercular masses in various parts of the brain, which lead eventually to a fatal termination by the irritation and inflammation they excite." 149.

To continue the conclusions—

"3. That there are cases, from their symptoms, hardly to be distinguished from the last class, in which effusion into the ventricles is the only morbid appearance met with at death; and that in these instances the essence of the disease appears to consist in some alteration in the condition of the nervous matter, probably allied to irritation, and that they may, therefore, be said to constitute a purely *nervous variety*.

"4. That there is a class of cases distinct from the above, but closely allied to them, which may be generally traced to some source of exhaustion, either

direct or indirect, in which the post-mortem appearances are generally indistinct and of a trifling kind, consisting, for the most part, of some degree of congestion of the large vessels, and a little effusion of serum; and that, in some of these cases, the effusion has probably resulted from injudicious treatment, had recourse to with a view to cure an imaginary inflammation; these being the cases described by Dr. Hall and others under the designation of '*Hydrencephaloid Disease.*'" 157.

Chap. VI.—Diagnosis.

We regret that our space will not admit of our transcribing some excellent remarks upon the importance, not only of forming a correct diagnosis, as to whether cerebral disease exists at all, but also, as to what particular form of it may be present. There are numerous other important observations, however, that we must not pass over.

In the *sthenic* form, the disease is usually recognised by the activity of its symptoms. There is a considerable similarity to the precursory symptoms of small-pox, but the *rigors*, which are usually so distinctly present in the latter, are not so in hydrocephalus.

With respect to the variety consecutive on scarlatina, the author makes the following remarks.

"In that form of hydrocephalus supervening on scarlatina, (and more especially on measles,) the diagnosis is not usually attended by much difficulty, though, in some instances, its approach may be very insidious. Any degree of headache associated with a deficient secretion of urine, especially if it be of a low specific gravity, and coagulable, and still more, if anasarcous swellings of the extremities have accompanied the headache, or it have succeeded to the rapid disappearance of such swellings ought to be looked on with very great anxiety, and be met by immediate and energetic treatment. Headache, of a more or less severe and continued character, is the almost invariable precursor of this form of hydrocephalus; and an acquaintance, not very limited, with this, as well as other forms of dropsical effusion succeeding to scarlatina, has convinced me, that, whenever it occurs in the circumstances I have mentioned, and is attended by a loaded or furred tongue, and any degree of febrile action, we are warranted in regarding it as indicative of such congestion within the head as will, if not removed, be, in all probability, speedily followed by convulsions and coma.

"It should ever be recollected that it is not the severe forms of scarlatina that are most frequently followed by this important and dangerous sequela, but the milder forms, in which the rash has been trifling, and that have been attended by little angina, and no affection of the glands. Some exposure to cold will almost always be found to have been the exciting cause of the affection; after which the children suddenly lose their appetite, and complain of more or less languor, and frequently of pains in different parts of the body, and the urine becomes scanty and altered in quality. These symptoms of general derangement of the system are more marked in some cases than in others, and convulsions, or rapid coma, may come on *apparently* without any precursory symptoms, or without headache; and, therefore, to a certain extent, the usual statement may be correct, that the form of cerebral affection we are alluding to, is often very insidious. But my experience would rather lead me to say, that it was chiefly characterized by the very rapid manner in which it runs its course, when once developed; and that the preliminary symptoms referred to, particularly the headache, have always been present, though unnoticed or disregarded,

It has certainly not occurred to me to meet with any difficu'ty in detecting either the precursory symptoms of this form of disease, or in recognizing its true nature in the subsequent stages." 164.

The subacute, or nervous variety of hydrocephalus is often of difficult detection, and then it becomes a matter of great nicety to decide whether the cephalic symptoms result from primary affection of the brain, or are merely secondary to, or sympathetic of, other disorders of the system. Every practitioner is aware of the great difficulty in this way experienced as regards infantile remittent fever. The following remarks, on the distinction between these diseases are worthy of attention.

"Dr. C. Smyth, who has, in many respects treated of the diagnosis of the simple forms of hydrocephalus more satisfactorily than most other writers, lays particular stress upon the admixture and alternations of the symptoms of irritation and those of oppression as distinctive of hydrocephalus. The association of these two classes of symptoms is remarkable, and can hardly fail to be noticed. Extreme irritability of the stomach, denoted by nausea and frequent vomiting, is in contrast with the remarkable insensibility of the bowels, as indicated by obstinate constipation. Morbid sensitiveness to light and sound, and touch, are in opposition to the sluggishness of the pupil and constant drowsiness; whilst the slow breathing and sighing often contrast as forcibly with the quick pulse. Does any other disease present such an association of symptoms? 'I am perfectly aware,' says Dr. Smith, 'and readily allow, that many of the symptoms of irritation are caused equally by teeth, worms, or other irritating matters, affecting the alimentary canal; but I do affirm that no irritation causes the constant combination of opposite symptoms above described.'" 167.

Another characteristic of the disease, of scarcely less importance, Dr. Bennett says, is the remarkable fluctuations and variability of the symptoms. "The children are often in a state of deep coma one day, and the next easily roused and perfectly conscious. The vomiting at one time is perpetually occurring, and at another the stomach shows no evidence of morbid irritability; the limbs are now convulsed, and now paralysed; the pulse for a few hours quick, then falling to the natural standard: now regular, now irregular and intermitting: the face flushed one moment, and pale the next, and so of all the more important functions."

The author next considers the diagnostic value of the various individual symptoms. *Headache* appears early and is seldom absent except in very chronic cases, while, in the hydrocephaloid affections, it is often not present. *Stupor* is always present in the true disease, as well as in the pseudo affections, and, therefore, its absence is of great negative value in determining that serious cerebral disease does not exist. The apparent stupor, in many febrile affections, is distinguished, by the ease with which the child may be roused, and the ready manner in which the pupil will then act. *Vomiting* is almost always present, and is valuable in diagnosis, in proportion as it occurs spontaneously, or from mere change of posture. Obstinate *constipation*, an early symptom, becomes the more observable when, as it often does, it succeeds to an undue relaxation of the bowels, which may have existed prior to the cerebral disease. This is not observed in the spurious affections. The green and gelatinous condition of the *stools* offers only some corroboration of other symptoms. The *morbid sensibility of the eye and ear* is found equally in the hydrocephaloid dis-

ease, but its non-occurrence in the early stage, affords strong presumption of the non-existence of cerebral inflammation. Dr. Bennett lays little stress on the condition of the *pupil*, which, although usually contracted at the commencement of the sthenic variety, may assume any appearance in the others. Contrary to Dr. Green, and the French observers, he has found the *pulse* quick and irregular at the commencement of even the strumous and low varieties of the disease. But prognosis should not be founded too hastily upon the excessive rapidity or slowness of pulse, which sometimes precede the fatal termination, as this is often falsified. The state of the *respiration* is diagnostic. Simple increased rapidity is characteristic of fever, but irregular, sobbing, or suspirious breathing, betokens hydrocephalus. The importance of *convulsions*, and of their period of occurrence, as relates to diagnosis, has been exaggerated. One of the most valuable symptoms, considered by Smyth and Gölis as almost pathognomic, (of the scrofulous variety at least,) is a *retracted state of the abdomen*, which is produced by no other disease of children, and resembles the appearance induced by painter's colic in the adult.

Chap. VII.—Treatment.

The acute and sthenic varieties, occurring in healthy children, must be met with the most energetic depletory treatment, and, restricted to such cases, the proceedings recommended by Clarke are admirable. So, too, where the affection follows scarlatina, or other exanthemata, vigorous depletion and free purgation, will alone save the child—the skin being simultaneously excited by friction and diaphoretics.

All this is plain sailing enough, and no one will gainsay these doctrines, but the low, nervous, or strumous variety is that which truly offers difficulty, both in diagnosis and treatment; and we are disposed to value highly the present work, principally from the able protest the author enters against indiscriminate bleeding in these cases. Even in this variety, he bleeds at the very commencement, to relieve the headache, and place the brain in a condition more amenable to other remedies; but, he regards attempts to *cure* it by this means as a most fatal fallacy. As a general rule, leeches, or a few ounces of blood taken by cupping, from the vicinity of the mastoid process, will suffice, and, indeed, even this can only be employed at an early stage of the disease.

"I am quite aware that, in the eyes of many practitioners, of the present day, these very modified views respecting the employment and utility of bleeding will meet with but little favour. They have, however, been forced on me by my own observation and experience of the disease; and their soundness has I think, been proved by the increased success that has attended their adoption. Let it not be forgotten, however, that our success will be proportioned to the judicious manner in which we combine other parts of the treatment with this modified employment of depletion. It appears to be an error, into which many have fallen, to suppose that if the treatment is to be antiphlogistic, and depletion resorted to at all, diuretics, sedatives or any other remedies adopted to counteract the tendency to effusion, or other changes unconnected with inflammation, may be dispensed with. But it is far otherwise. The true secret of success consists, not merely in preventing or counteracting the attendant, and often

accidental, inflammation, but also in allaying irritation of the nervous system, and in obviating the tendency to effusion and to exhaustion." 196.

The application of *cold* is valuable, when duly directed, but often hurtful when left to the nurse. The douche is confined to the active form of the disease, and, in all cases, even the application of a lotion must be guided by the state of the pulse and the temperature. Evaporation takes place more completely from the cropped hair than from the shaved head. *Purgatives* are valuable in all forms of the disease, and a full dose of calomel and purgative enemata should be given as early as possible, and, where vomiting resists every thing else, a drop of croton oil may be placed on sugar upon the tongue. Except when gastro-enteritis is present, a free action must be maintained throughout the duration of the disease. *Blisters*, delayed in the sthenic, are useful in the low form from the commencement, applied to the nape, thighs and calves in which situations too, sinapisms have their utility.

Narcotics and Sedatives.—The author believes these have been too sparingly employed. When after the active depletion required for the active form of the disease, great irritation of the nervous system remains, *opium*, in discriminating doses, (the contractility of the pupil, as observed by Dr. Holland, must contra-indicate it) may be given with great advantage; and, even when the skin is dry, and the tongue and lips parched, Dover's powder has often the happiest effect. The more the case seems one of irritation the earlier must this means be resorted to; and, in the latter and apparently hopeless stage, although the coma may be encreasing, opiates have sometimes saved the child. Sedatives much assist the convalescence after severe depletory treatment; and they are of the greatest utility in cephalic irritation, or erethism of the brain, produced by causes acting at a distance—care being taken to remove these also, as far as possible. Where the mere allaying of irritation, and the procuring of sleep are required, the author prefers muriate of morphia, but where the tonic properties of opium are also to be obtained, he gives laudanum or Dover's powder the preference. Hyoscyamus is often useful, but in a far inferior degree to opium. For a child of one year old one drop of laudanum is a sufficient dose, but if, in three or four hours, no unpleasant symptom has occurred, it may be encreased.

Mercury.—Dr. Bennett does not agree in the encomia which have been bestowed upon the drug, although it has sometimes proved beneficial in the latter stages. It is a useful addition to opiates, preventing constipation and obstruction of biliary secretion, while, calomel given as a purgative, or combined with diuretics is very valuable.

Diuretics.—The author considers these have been far too much neglected. The tincture of squill, combined with the spirit. ether. nit. and m. camph. is very useful in the latter stage of the low form, as is the combination of the powder with calomel and opium.

Iodine has frequently been found of decided advantage, and the hydriodate of potass has relieved cases, apparently sunk into a hopeless state.

Tonics and Stimuli.—These have not been sufficiently resorted to in this country in the latter stages, when they are often very useful; and it must be remembered also that the case may become aggravated by the too long persistence in an antiphlogistic diet.

Preventive Treatment—Is much more likely to prove successful if the strumous pathology be admitted. This section contains some admirable remarks on the hygienic management of the predisposed, and on the avoidance and treatment of that prolific and unheeded source of disease —strumous dyspepsia.

An Appendix furnishes a few illustrative cases.

We have perused this work with unmixed satisfaction and congratulate the London Medical Society at having elicited so valuable a contribution from its talented author. Much has been quoted, but we assure the reader that much important matter remains untouched; and, usually chary in recommending his purchasing books in this book-making age, we can conscientiously do so with respect to the present production. To the young practitioner fresh from the schools, and imbued with the mere theoretical views too often taught therein, a work of this practical and discriminating character must prove of great value. To the more experienced it will afford a hope that a more just pathology may produce a more appropriate treatment, and will encourage them in the doubts and compunctions, they must have so often entertained, as to the soundness of the prevalent routine practice, recommended though it be by high-sounding names.

Views upon the Statics of the Human Chest, Animal Heat, and Determinations of Blood to the Head. By *Julius Jeffries*, F. R. S., &c. &c. London, 1843.

The author has divided this work into three Parts. The first Part, to which for want of space we must confine our notice in the present number of the Journal, treats of the capacity of the chest, and the nature, condition, and office of its gaseous contents, under the term *Statics*. For these points the author claims an importance hitherto exclusively attached to the act and air of respiration, and accordingly demands a considerable modification of our previous opinions. The first point he sets about determining is the capacity of the chest. "Without," he says, "the aid of any nice apparatus to determine the quantities concerned, every person may, and often does, unconsciously make the following experiment. At the moment when he has completed an act of inspiration, and just before he performs the act of expiration, he may, instead of the latter act, force himself to continue to inspire air, when he will find that his chest can take in, before it is distended, a quantity of air very much larger than that of any ordinary breath.

"Again, after an act of expiration, at the moment when he would

instinctively inspire, he may, instead of drawing in breath, continue to breathe out for a great length of time, if he is in health. If it has not occurred to him to make the experiment before, he will find to his surprise, that, at that period when the instinctive desire to take in breath had led him perhaps always to suppose his chest was empty, it still contained a vast quantity of air."

It is ascertained that the mechanism of the osseous fabric and muscles surrounding the chest is such that the utmost motion they admit of is at an end before all air is compressed out of the chest; there is, therefore, still a considerable quantity of air which cannot by any effort be expelled —this is the quantity that remains in the body after death. Adding to these the air of ordinary respiration, we have four distinct quantities; first the bulk of air, which we cannot by any effort expel—this we may call—the *residual air*. Then, on the top of this, we have the large bulk which we can expel after an ordinary expiration; this we call *supplementary air* —next comes the fluctuating *air of respiration*—and next we have the occasional quantity of air, which the chest is capable of taking in with a sigh or a yawn, after an ordinary inspiration—this our author calls the *complementary air*.

Notwithstanding the importance of these several bulks of air, it is strange that it is the air of respiration alone, which is made the subject of speculation, and upon which the various theories of respiration up to the present hour are built—with respect to the bulks of these several quantities our author sets them down as follows:

	Cub. Inches.
Residual air	120
Supplementary air	130
The breath	26
Complementary air	100
	376

With respect to the first and second volumes of air in the above table, as they are permanently resident in the chest, they may be called by one common name, *resident air*.

The air of respiration, which is ordinarily spoken of as that which acts on the blood in the air-cells, and when breathed out, as having given out a portion of its oxygen to the blood, and received from the blood carbonic acid and watery vapour, is denied by our author the power of ever entering the air-cells or even the smaller air-tubes. He states that it has no *direct* concern in the oxydation of the blood, and that it does not receive its carbonic acid and vapour directly from the blood. Nay more, he says that its constant presence in the air-cells would be injurious to health, and probably soon fatal to life. At these conclusions he has arrived from considering the structure of the lungs, and the position which the resident air in them occupies. When the chest expands at the moment of inspiration the *resident air* recedes before the entering breath, the portion of it most distant from the breath adding itself to the resident air already in the cells, so as to fill them up as the chest expands. This entering air cannot take the place of the resident air and descend into the

cells; there is no gravitating force sufficient to make it do so; the breath at each entry can only mix itself with the uppermost portions of the resident air immediately contiguous to it. An indraught of breath of 26 cubic inches may mix itself during the respiring act which brought it in with 60 or 80 cubic inches of the resident air. Hence when a corresponding quantity of air is breathed out, it is not that which went in, but a mixture of that air with the uppermost resident air. A very natural question here suggests itself, viz. how are the purposes of respiration fulfilled, and how are the smaller air-tubes and cells supplied with air sufficiently oxygenated? Two ways offer themselves for this purpose; the first and chief is that of a progressive intermixture, proceeding by steps from without inwards at each inspiration, by which means oxygenated air is carried onwards, step by step, to the air-cells. The other way by which this object is aided is that of the expansion of a gas out of its own mixture into any contiguous volume of air, in which that gas is deficient—a process of the nature of endosmosis. Thus oxygen may travel down, and carbonic acid up, although the other gases in which they are do not change places. Thus, then, the air of respiration performs no direct duty in connection with the blood. In its fresh state it does not come even near the cells; its duty is altogether indirect; its action is to ventilate the chest gradually, from above downwards, and to receive the impurities gradually brought up from below, exchanged for an equal bulk of more recent air conveyed from above. Thus, then, it would appear that the *resident* air forms the chief bulk of the contents of the chest, and is that which is wholly concerned in the oxydation of the blood. The author supports his views on this part of his subject with some very ingenious arguments.

"We now surely," says our author, "may perceive the beauty of the arrangement which lodges a large quantity of air durably resident in the cells; which is there during expiration as well as inspiration, and also at the interval between the two; and is, therefore, carrying on its barter with the blood, at all times, continually and uninterruptedly.

"While this is going on, the process of *respiration* is alternately pumping in fresh air, and pumping out a mixed air: thus ventilating the chest from above, and keeping the resident air of some standard quality. Experiment tells us, this standard contains upwards of eight per cent. of carbonic acid. The quantity is probably not under ten per cent.

"In order that the action upon the blood should proceed equally and uninterruptedly, we now see the necessity of the *resident air* being larger in quantity, and the fluctuating air, the breath, much less. The case may, to a certain extent, be compared to superior double bellows, such as those of an organ, the larger portion of which is kept in a steady degree of fulness by the quickly pumping movement of the other. The bellows-man knows well that, in order to have a very steady blast, he must keep a large quantity of resident air always in his bellows."

The author puts questions which nobody else ever thought of proposing. He says, how can we do such violence to convictions in favour of fresh air, derived, not only from preconceived notions, but from our sensations also, as to believe that no better air visits the cells of the lungs, than such as is charged with carbonic acid to the extent of 8 or 10 per cent.? And can we think such air sufficiently oxygenous for carrying on the active

transactions with the blood which we perceive to take place? We shall endeavour to answer these questions as far as is possible within the limits of a review, and in the author's own words:

"Since the ventilation of the innermost parts, the air-cells of the lungs does not take place, out-and-out at each act of respiration, but gradually and indirectly, through a change progressively wrought on the bulky *resident air*—since the fresh air, in short, forms so small a part of the whole, and can mix only with the uppermost portions of the resident air—since such are the conditions of the case, is it not all the more desirable that what does enter should be very fresh? Hence the jealous sensibility of the orifice of the mouth and nostrils, especially of the latter and of the larynx, to impurity of air. Hence to these portals to the lungs the care is confided, by investing them with a watchful sensibility, of seeking the purest air that can be had for the ventilating process. But as we go deeper, we find, as a matter of fact, that this sensibility decreases gradually. In the windpipe it is less than in the larynx, and in the bronchi it is less still."

In this decrease of sensibility the author perceives a corroboration of his views.

"The *statistical fact itself* is a truth too absolute to admit of corroboration. Thus, Nature having so arranged matters, that of the whole air (the resident, and the tidal or respired), that which is at the summit of the lungs shall be quite pure; and that the air shall gradually decrease in purity, until that which is in the cells is charged with 8 or even 10 per cent of carbonic acid: such being the natural arrangement, the successive surfaces are given a corresponding degree of sensibility. Thus, we are very comfortable while we have our air-cells occupied with air so highly carbonated; it occasions no uneasiness though occupying the greater part of the lungs; but were similarly impure air to be uninterruptedly present at our nostrils during inspiration and expiration, we should turn from it with feelings of suffocation."

Our author suggests as well as answers a question which may be put here; viz. why should such impure air be always resident in the lungs, and how can we entrust to it the active duty of oxydating and defecating the blood? (The resident air in the chest he supposes to contain about 10 per cent. of oxygen.)

He considers that the state of oxygenation of the air contained in different parts of the chest is accurately proportioned to the degree of tenuity of the pulmonary membrane in contact with it; that is, in the uppermost parts of the chest, where this lining membrane is comparatively tough and thick, the air is more highly oxygenized than in the lower parts, where, if the air contained the same proportion of oxygen, it might act with too much intensity on the delicate and thin membrane lining the minute air-cells.

"The truth evidently is this, that since the air of respiration, as such, penetrates but a small way, and since it can only work its way down to the deeper part of the lungs by repeatedly mixing with successive portions of the bulky resident air, any irritating properties it possesses must become greatly diminished by the repeated dilution of it, before any portion of it can reach the cells. We may satisfy ourselves experimentally of the truth of this, by breathing out to the utmost, so as to expel as much of the resident air as we can, namely, its supplementary portion, and then, drawing in a dusty, or otherwise irritating atmosphere, we shall be immediately distressed by it, though we might have been performing ordinary respiration in it without difficulty."

The next point which our author considers is, the particular region which the air of respiration occupies in the range of the chest's capacity. We have already seen that, in the act of respiration, the breath flows in and out on the top of a large quantity of air (resident air,) and within the limits of a large range yet remaining, called the complementary space. He now considers why the region of respiration is placed, as it were, two-thirds of the way up the chest, and whether it occupies the same locality in all persons, or the same in the same person at different periods. We have already seen the object of having a supply of resident air in the chest was to guard the delicate structure of the air-cells from air of too irritating a quality. This affords a reason why we do not respire as it were at the bottom of our chests, upon empty lungs. The reason why we do not respire at the summit of our chests, with the lungs already filled with the complementary as well as the resident air, must be sought in the fluctuating demand for air of respiration.

"During exercise, and especially during considerable exertion, we know that the hurried circulation of the blood through the lungs calls for a more copious supply of air. To command a range for a deeper respiration, we must either breathe out some of the resident air, and add the room thus gained to the previous range of the respiration; or, retaining in our chests the same quantity of resident air, we must increase the repiratory range by intruding upon the complemental space."

"The 'being in breath,' and its opposite 'not in breath,' appear mainly to depend on these different modes of increasing our respiration. An unpractised runner, for instance, tries to relieve himself by the former method; but he soon feels the consequence of letting out too much of his resident air, and drawing in too deeply atmospheric air, fully oxygenous, and perhaps also cold. He gets out of breath—that is, when he wants more air than usual, he cannot take in so much; a kind of asthmatic spasm prevents him from getting air enough down. ..... On the other hand, by practice he instinctively learns to keep adding air to that already present, and to breathe nearer to the top of his chest. He can then respire deeply without drawing in the fresh air too suddenly and too far into the lungs.

For the other remaining articles in this book we must refer our readers to our next number. The truly original views on so interesting and vital a subject must recommend Mr. Jeffries' work to every medical practitionor.

On Gravel, Calculus, and Gout: chiefly an Application of Professor Liebig's Physiology to the Prevention and Cure of these Diseases. By *H. Bence Jones*, M.A., Cantab., Licentiate of the College of Physicians. London: Taylor and Walton. 1842.

The object of this work, as may be seen from the title, is to apply the ingenious principles of Professor Liebig to the palliation and cure of those

very distressing affections, gravel, gout, and calculus. It certainly will be admitted that the chemists have, within the last few years, made splendid contributions to the elucidation of some of the most formidable diseases to which flesh is heir; and we are free to acknowledge that we have not the slightest objection to their considering and treating the human frame as a chemical laboratory, provided always it be kept in view that it is a *living* one. We shall without further preamble introduce our author. He commences by describing the prominent character of the *uric acid diathesis.*

CHAP. I.—ON THE URIC ACID DIATHESIS.

Of the substances produced within the body, and which, as being of no use, are to be eliminated, it may be laid down, that acids, highly nitrogenised substances, and salts, are carried away by the kidneys. In the healthy state the excess of water in the body thrown off with them is sufficient to hold them in solution, and it is only when the nitrogenised substances are produced in excess, compared with the water, or when they do not undergo the ordinary changes, or when the acids which effect the solution are wanting, that a deposit takes place in the urine. The deposit may be either in the form of a white powder, that is, without definite form, or with a definite crystalline form. The substances without definite form, and rendering the water thick and muddy, consist of urate of ammonia and phosphate of lime, with phosphate of ammonia and magnesia. Those with a definite, crystalline mass, or gravel, alone or mixed with the powdery deposit, consist of uric acid, oxalate of lime, and phosphate of ammonia and magnesia. The deposit assumes different colours, according to the substances with which it is mixed; the substances which form urinary concretions, when pure, being perfectly white. By uric acid diathesis is understood that state of the system which produces a constant deposit in the urine of uric acid, either free, or combined with some base. This is generally red, sometimes yellow, most rarely white, entirely soluble in alkalies, and by heat alone, when it consists of urate of ammonia. It may take place in health occasionally—its constant occurrence, however, indicates disease.

In the Second Chapter our author considers *the Changes which take place in the Albuminous Tissues.* "We can," he says, "have no idea of life continuing without perpetual change, which is evident from the never ceasing muscular action, respiration, secretion, and absorption. The constant product of uric acid is a consequence of these changes. The albuminous tissues gradually divide into different substances, some useful, others useless, and these last are removed from the body, though for their more easy removal they may, as in the case of uric acid, undergo further changes. At present we must consider the uric acid as arising directly from the albuminous tissues, that is, without any other substance being previously formed, from which the uric acid is afterwards produced. We have as yet no proof of a previous stage." In order to account, in some degree, for the causes which hasten or retard the changes which occur in these

albuminous principles in the body, it becomes necessary to adduce a statement of Professor Liebig's views on this part of the subject.

The cause of change in the albuminous substances is the chemical action of oxygen, which takes place only when the resistance which the vital force of living parts opposes to this chemical action is weaker than that chemical action itself.

This vital force requires for its manifestation a high temperature, and is diminished by muscular exertion, so that the amount of change in the albuminous tissues may be taken to be directly proportional to the amount of muscular action, the times and temperatures being equal; and in equal times, with equal muscular action, if we surround a part of the body with ice or snow, there occurs more or less quickly, in consequence of the loss of heat, an accelerated change of matter. Such change may be promoted indirectly by accelerating the formation of the ultimate products from these tissues—by increasing the action of the oxygen, by increasing the blood-globules, and by abstaining from non-azotised food, by giving an excess of albuminous food, and by giving an alkali to promote the formation of bile. The oxygen of the atmosphere is the proper active external cause of the waste of matter in the animal body; it is a force which tends to destroy the vital force at every moment. The resistance which the vital force makes to its action is very different at different stages of life, and varies with the different states and circumstances in which the body is placed. From all this it appears, that the less resistance the vital power makes to the action of oxygen, the greater will be the amount of change, and the more uric acid will be produced in the albuminous tissues; the resistance being diminished by muscular exertion and low temperature, an excess of uric acid will also be produced on that account. Increasing the amount of oxygen and thereby overcoming the resistance will be productive of the same effect. Thus, much oxygen, a low temperature and great muscular exertion will occasion an excessive production of uric acid from the albuminous tissues. From this it appears the indication should be to increase the resistance of the vital force and to lessen the action of oxygen; this is to be accomplished by avoiding everything tending to diminish the vital principle and by tonics; another and a more important indication is, however, also to be attended to, viz. to promote further change in those substances which arise from the tissues, that is, to effect a change in the uric acid itself; a deposit containing uric acid can rarely occur as a consequence of excessive changes in the albuminous tissues, for in such cases a large quantity of oxygen is generally absorbed, which will effect a further change on the uric acid, that is, uric acid will no longer appear in the urine, but urea, that is uric acid oxidized, will be formed in large quantities. The case is different in those carniverous animals which take in little oxygen, or in which the oxygen cannot act on the uric acid in consequence of an excess of non-nitrogenous food being eaten. We have an instance of this in the boa-constrictor, which makes but little muscular exertion and is kept in a warm atmosphere; here a considerable quantity of uric acid is produced by the changes in the tissues, all of which acid however appears as urate of ammonia in the urine, the small quantity of oxygen absorbed not being sufficient to oxidize it.

With respect to the changes, which occur in the gelatinous tissues, our

author comes to the conclusion that, at least, whenever an insufficient quantity of oxygen is present, uric acid may be produced by the metamorphosis of the gelatinous tissues. He now considers *the change which the uric acid undergoes after its formation.* Some of the changes which uric acid may be made to undergo out of the body are thus stated by Liebig: when uric acid is subjected to the action of oxygen, it is first resolved, as is well known, into alloxan and urea; a new supply of oxygen acting on the alloxan, causes it to resolve itself either into oxalic acid and urea, or into oxaluric and parabanic acids, or into carbonic acid and urea; that is, if a full quantity of oxygen is given to the uric acid, carbonic acid and urea may be obtained; if a smaller quantity, oxalic acid and urea; and if none is given the acid remains unchanged.

Such changes may be effected in the laboratory, by submitting uric acid to heat, oxygen and water; and it is by these three agents that similar changes are effected in the body. Long exposure of impure urate of ammonia to the action of the oxygen of the atmosphere seems to change the uric into oxalic acid. The oxygen is by far the most important agent in these changes.

Liebig has shown that the waste of matter and the production of animal heat are both dependent on the absorption of oxygen. This is necessary to furnish its elements for the production of alloxan and urea, and also to keep those substances which are formed in such a state as may enable the oxygen to act on them most readily, whilst the heat renders the chemical changes more rapid and more complete. In health these agents are sufficient to change all, or nearly all, the uric acid; but at other times they may not be in sufficient quantity, especially the oxygen; so that, when there is want of change in the uric acid, it indicates in almost every case a deficiency of oxygen, and this may in general be regarded as the cause of the uric acid diathesis.

We may now see on what the quantity of uric acid actually thrown out of the body depends; as it is not possible for the uric acid to vary, excepting, 1st, with the quantity produced in the body; 2d, with the quantity changed before it is thrown out; and supposing none to be changed, or the quantity changed to be always the same, then the quantity thrown out by the urine will vary directly as the quantity produced by the metamorphosis of the tissues. If, on the contrary, we suppose the quantity produced to be constantly the same, then the quantity thrown out will vary inversely as the quantity which undergoes a change in the body; because the more uric acid is changed, the less will remain to be thrown out.

The author's endeavour has been to show that, in case of an excessive production of uric acid in consequence of a rapid change in the tissues from an excessive quantity of oxygen, as the excess of uric acid will be acted on and changed by the excess of oxygen into urea and carbonic acid, no deposit will appear in the urine under such circumstances; hence we have to consider only the quantity which is changed in the body, as influencing the quantity of uric acid in the urine; this general law our author thus states; the quantity of uric acid thrown out of the body varies inversely with the quantity which undergoes a change in the body. Of all the agents which effect this change we have seen that oxygen is the most necessary; whence it may be concluded that the quantity of uric acid

thrown out varies inversely with the amount of the action of oxygen, and thus, with the exception of tonics, the problem of curing the uric acid diathesis depends on this, viz. how the uric acid in the body can be most acted on by oxygen, how can it be changed into urea and carbonic acid: our author says that this may be done—

1st. By giving a large supply of oxygen, as by exercise, by cold air, and by medicine, as by nitrous oxide water, and iron.

2dly. By diminishing the quantity of other substances, on which the oxygen acts more readily than on the uric acid; that is, substances consisting of hydrogen, carbon, and oxygen only:—as by abstaining from these as food, by removing them by aperients, and by sudorifics.

3dly. By keeping all the uric acid produced in solution, by water and by alkalies. 1st. An increased amount of oxygen may be taken in by exercise, the consumption of oxygen in equal times being represented by the number of respirations. The same end may be attained by cold air, though in a less degree. The use of iron is also recommended for the same purpose, this mineral having the power, according to some, of increasing the number of red globules. Hence iron may be supposed to be an agent in increasing the amount of oxygen which is taken to the capillaries. 2dly. The action of oxygen on the uric acid may be increased by lessening the compounds of hydrogen, carbon, and oxygen in the body; and this may be done by abstaining as much as possible from that food called by Liebig non-nitrogenised, or the "elements of respiration." These substances, serving for the support of animal heat, readily combine with oxygen, and thus, when they exist in large quantities in the body, they hinder the action of the oxygen on the uric acid, which would otherwise be changed into urea and carbonic acid. So that the existence of these substances in the body in large quantity prevents the uric acid from being oxidized. Starch is well known to constitute a considerable part of our food. When taken into the stomach it begins to change into sugar, and by degrees the whole is rendered soluble. This continues usually a few hours after a full meal, and therefore, during this time, the quantity in the blood is larger than at other times. Hence probably it is, says our author, that there is less action on the uric acid, and we consequently find the greatest deposit of uric acid, or the urates, takes place after a large meal and continues for some hours. The oxygen may act on the sugar and fat, and convert them into carbonic acid and water, or these substances may first undergo some further change before they combine with the oxygen.

The next means which we possess for increasing the action of oxygen, is by diminishing the quantity of those substances on which the oxygen acts, by aperients, and particularly by those medicines which promote a secretion and evacuation of bile. Whatever the theory be, which we may adopt, the fact is certain that by purgatives we lessen the quantity of carbon in the blood, and so permit a freer action of oxygen on the uric acid. Emetics which produce bilious vomiting are capable of producing the same effects. The quantity of non-nitrogenous compounds may also be diminished by sudorifics. The perspiration contains both acetates and lactates, which are compounds of carbon, hydrogen, and oxygen. By sudorifics these substances are removed from the blood, and thus the oxygen, which

would have been necessary to convert these into carbonates, is left to act on the uric acid.

3dly. The uric acid may be acted on in an increased degree, by keeping it in solution; and this must be done from the time of its production in the ultimate tissues; for this purpose free alkalies, alkaline carbonates, salts of the vegetable acids have been found useful.

We now come to the *treatment of the uric acid diathesis*. First, with respect to *exercise*—this should always be regulated by the amount of fatigue produced. Exercise producing perspiration is the most beneficial, and this the more so the colder the air is; as a greater quantity of oxygen is absorbed thereby; we must beware, however, of depressing the vital powers, by which an excess of uric acid might be produced. Sleep should be indulged in only so far as may be necessary to repair the fatigue which exercise has produced. Hot rooms should be avoided. The use of nitrous oxide water has been recommended as the best diluent. By the various preparations of iron we may increase the amount of red particles in the blood and thus influence the quantity of oxygen which is absorbed—the sesqui-oxide of iron has been deemed the best; and as, according to Liebig, it is in this state the iron exists in the red-colouring matter of the blood, there may be some grounds for considering this the best preparation of iron. To facilitate its absorption it should be given in the minutest state of division. For this purpose it should be given newly precipitated from some soluble salt of iron, as from the sesquichloride or persulphate of iron, from which the hydrated peroxide of iron may be formed by adding carbonate of ammonia or soda.

Our author now considers the treatment by diminishing the non-nitrogenous principles in the blood. This treatment he founds on the principles contained in Liebig's Physiology:—It has been shown, he says, that the substances which contain no nitrogen, by combining with the oxygen, which has been inspired, hinder the action on the uric acid; and it is highly probable that no albumen undergoes metamorphosis until it has served the purposes of life. These are the first principles by which the practice should be governed; and hence by far the most beneficial diet is a moderate quantity of meat, with a much smaller quantity of bread. The kind and quantities of both must be regulated by experiments and by consideration of the habit and exercise of the patient. The quantity of starch in flour, as compared with animal food, renders it unsuitable to live only on bread. Meat alone would be far more beneficial; but in most people the process of respiration almost requires some substance which contains no nitrogen, though it should be taken in small quantities only. If the quantity of bread be small, the quantity of animal food may be proportioned to the exercise and the state of the body; for thus the changes which are going on in the tissues will be repaired, and the oxygen, finding but little non-nitrogenous substance in the blood, will act more readily on the uric acid, changing it into urea and carbonic acid. Sugar and starch comprehend much the largest part of those substances in vegetables which can be absorbed; nitrogenous and oleaginous substances are present generally in small quantities, though the relative amount of these principles varies much in different species. Thus, potatoes and rice are amongst those in which most starch is found, and these are therefore most inadmissible

while in greens and peas, there is much more nitrogenous matter, which in peas is similar to cheese. Fruits usually contain large quantities of starch and sugar; on this account apples and pears are most objectionable.

Among non-nitrogenous substances we must include fat. If the formula for this is taken, as $C_{11}H_{10}O$, then 31 equivalents of oxygen are required to convert this into carbonic acid and water, and by taking this substance as food, so much oxygen is prevented from acting on the uric acid. Neither should butter be taken in excess. Gelatine, which forms the principal constituent of soups and jellies, may be used as a partial substitute for meat; but as the albuminous tissues cannot be formed from it, it cannot be entirely substituted for it without the strength failing.

With respect to drink, the oxygenated water is best, then water which has been distilled, as being the best solvent. This, however, cannot be had everywhere. Some recommend the water to be filtered. This process removes all the substances suspended, but not those dissolved in it. Boiling the water has also been recommended.

We have already seen that the non-nitrogenous bodies in the blood may be diminished by aperients which act on the liver. These are most useful when the deposit is dark-coloured. Of such medicines, calomel, aloes, colchicum, and colocynth are beneficial, both in large and purgative doses, and also when given in such a way as to increase the secretion of the liver. Hence the efficacy of blue-pill as an alterative.

Sudorifics are sometimes given with advantage. With respect to baths, their action may be considered on the nerves and on the blood, and on each the action is of two kinds; thus on the nerves there may be a stimulant or a sedative action, and on the blood they are capable of removing substances from it and of enabling them to be absorbed into it. These modes of action depend on the state of the system, the temperature and the substances which are dissolved in the bath. In one point of view the skin may be looked on as an expansion of the nerves of sensation, and by acting on the nerves of sensation, the whole system may be influenced. The action of the bath on the nerves of sensation depends on its temperature, as well as on the state of the system; thus, in some states, a warm bath causes irritation, and in others, it acts as a sedative, whilst the same is the case with cold applications.

The removal of substances from the blood depends also on the temperature of the bath and the state of the system, and for this the vapour bath is most efficacious. The absorption of substances by the skin, does not seem to depend on the temperature, but on the state of the system, and on the substances which are contained in the bath. A great part of the benefit derived at Teplitz by those subject to the gout, depends on the absorption of alkalies by the skin.

As it cannot be expected that there will be the same amount of absorption when the system is saturated with moisture, as when a large quantity has been removed by the secretions during the night, it has been directed to take the baths early before food. Our author here suggests two kinds of baths to be used in immediate succession. This is the vapour bath, to remove water and acid substances from the blood, and immediately after an alkaline water bath, by which alkaline water may be taken into the blood. The next point to be attended to, is to keep all the uric acid

in the ultimate textures in solution. This may probably be effected by water and alkalies. When these, or their carbonates, are given, they should be taken and dissolved in water at least an hour before food, so as not to interfere with digestion; these medicines may relieve the complaint, but they can never cure it.

When uric acid is deposited in crystals, which may be recognised by their insolubility by heat, when they are soluble in an alkali, alkalies are then required, and this medicine must be given in such quantities as to combine with all the uric acid formed, when the deposit will either disappear altogether, or be changed for the urate of ammonia. By carefully abstaining from all vegetable acids, a crystalline deposit of uric acid will scarcely occur.

Our author makes a remark here, on the effect of salt in promoting the action of oxygen on the substances in the body, viz. that no animal can be fattened, if it is able to obtain much salt. When sailors are long fed on salt meat, which furnishes an abundant supply of alkali to the blood, whilst they are deprived of non-nitrogenous food, an excessive action of oxygen on the tissues of the body takes place, and when this is long continued, the scurvy appears, the salt hastening the rapid changes in the tissues. By diminishing the amount of alkali in the blood, and by giving non-nitrogenous food, the scurvy is cured or prevented, in consequence of such substances being acted on instead of the tissues of the body. This explains the benefit which arises from vegetable acids, from fresh vegetables, from sugar, wine, beer, wort, treacle, potatoes, &c. all which have been used with the best effects.

We now come to the interesting subject of *Gout*, which our author holds to be the invariable result of the long continuance of the uric acid diathesis; according to Liebig's views, it is most probable, he says, that great weakness, and inordinate muscular exertions, may increase the amount of metamorphosis in the tissues, and thus give rise to new substances, which must be oxidised in order to be removed, whilst excessive eating, sleeping, and want of exercise, constipation, vegetables, and little secretion by the skin, all produce the same effect,—all lessen the amount of oxidation which is necessary to remove those substances which result from the metamorphosis of the tissues of the body. Physicians of all ages have insisted on several of these as the cause of gout, and have recommended the opposite of them, as temperance, early rising, moderate exercise, alkalies, and medicines which act on the liver and the skin, as the means of cure. In the language of Professor Leibig, they have declared that the want of oxygen is the cause of gout, and the promotion of its action the only means of effecting a cure, or of hindering a return of the complaint. Numerous authorities are adduced by our author in support of these causes of gout. In Austria, a mode of treatment has been revived, which, in those who can endure it, is most beneficial in the diseases which may be included in the uric acid diathesis, as indigestion, bilious complaints, gout, rheumatism, and skin diseases. At Gräffenburg, in Austrian Silesia, under Priesnitz, the action of oxygen is promoted to a most beneficial extent in these diseases, but to a no less disastrous one in the opposite class of diseases which arise from too much action of oxygen on the body, as in phthisis and scorbutic cachexia. Until Professor Liebig

again directed attention to the action of oxygen on the human body, the causes of success and failure were unknown. At Gräffenburg the greatest possible action of the skin is produced by baths. Large quantities of water are required to be taken. Early rising, and a plain, though not strict diet, is ordered. By these means, the action of oxygen on the body is promoted to a very great degree; "and death ensues if ever the system is no longer able to furnish matter to resist the action of oxygen;" the condition of health consisting in an equilibrium among all the causes of waste and supply; "and death being that condition in which all resistance on the part of the vital force to the action of oxygen entirely ceases."—*Liebig.*

Much of the treatment at Leamington, and the benefit derived from it, may be accounted for in the same way. At first, abstinence and drastic medicines are ordered, and the strictest diet is enjoined, which consists chiefly of meat, with a small quantity of bread, and no fermented liquids, and much exercise. One hour's walk, at the least, before each meal. Large doses of iron are afterwards given. The waters, containing a considerable quantity of common salt, chloride of calcium, Glauber's salt and traces of iron, would assist the more energetic measures of Dr. Jephson, in promoting the action of oxygen in the body, as is soon indicated by the altered complexion.

Many of the German baths, as Teplitz, Marienbad, Carlsbad, Kissengen, Emms, and Weisbaden, are beneficial in gout, but not so much as the above plans of treatment, because the privations are not so great, and the other means used for promoting the action of oxygen are not so heroic: however, in the composition of the waters themselves they are superior. It appears that the drinking of alkaline or earthy carbonates, with small quantities of iron, as well as warm baths of the same waters, early rising and exercise, temperance, simple diet, and warm clothing, are nearly all the principal means of promoting the action of oxygen on the body. Excepting purgative medicines and active exercise, they include all the practice laid down by our author in the treatment of the uric acid diathesis. At Teplitz nearly two-thirds of the visitors suffer from gout. The waters drunk are the gartenquelle (cold), and the hautquelle (hot). The first contained, when 10 pounds of water were evaporated to dryness, 47 grains of solid residue, of which 28.9 grains consisted of carbonated alkalies and earths, with a trace of iron. The second spring contained 48.4 grains of solid residue, of which 32.1 are carbonates. Both springs also contain chlorides of sodium and potassium, and small quantities of sulphates of potash and soda. From three to six goblets of these alkaline waters are drunk, with intervals of a quarter of an hour between each glass, commencing between six and eight in the morning. The last of these springs, and others of nearly the same constitution, are used as baths; as complete baths, as well as hip or foot-baths, during from fifteen minutes to an hour before breakfast. By this means the amount of absorption is increased. After the bath, perspiration is promoted—temperance and simple diet are also prescribed.

At Teplitz, the alkalies are absorbed by long-continued baths, rather than by much drinking, and but little purgative salts are contained in the waters, whilst the country around is not so attractive to those who take

walking exercise as to those who ride or drive. Hence those in whom the gout is connected with obstructions of the liver will gain more advantage from more purgative mineral waters, and those who are able to take exercise on foot will find more inducements to it in other watering-places; where also more alkali is absorbed in consequence of more water being drunk, and where the excretory action of the skin is a consequence of exercise. Hence at Teplitz, those who are weak and unable to take exercise by walking, or to endure strong purgatives, will find the greatest relief; while those in whom the gout is accompanied by obstructions of the bowels or liver, and who are strong, will find more benefit at Marienbad, Carlsbad, or Kissengen.

Professor Liebig's views of gout are, that it is an inflammation in parts in which the usual changes, which the oxygen effects, are unable to take place, in consequence of an excess of the non-nitrogenous principles in the body; whilst rheumatism or "the universal gout" seems to arise from the changes being checked by the action of cold on the skin. There are however some points respecting gout and rheumatism which still require to be determined before the whole of the phenomena of these diseases can be perfectly explained. One is the question whether the uric acid is, in the state of health, produced in the ultimate textures, and there undergoes its changes into urea, in which state it is carried to the kidneys by the circulating blood, (and the existence of urea in the blood in Bright's disease and in cholera is in favour of this view,) or whether in the ultimate textures some other substance is first formed from the tissues, which, when it arrives at the kidneys, is there changed into uric acid, and afterwards into urea, in the way that has been pointed out. If this last be the case, the substance out of which the uric acid is formed must exist in the blood; and it is, our author observes, amongst those substances which are comprehended under the term "indefinite extractive substances of the blood," that search must be made for it. The probability of some such substance existing, is increased by the most accurate examination having as yet failed to detect uric acid or urea in healthy blood.

"Certainly," says our author, "the one or other of these states must exist; either there is an excess of that substance which is capable of producing uric acid when it comes to the kidneys, which is passed during an attack of gout from the systemic capillaries to those of the kidney, and there gives rise to the excess of uric acid which appears in the urine, or, what is perhaps more probable, urate of ammonia itself (formed from the metamorphosis of the tissues,) exists in the blood in larger quantities than usual. One or other must exist in the blood, during the fit of the gout, in larger quantities than in the state of health, and from one or other the excess of uric acid appears in the urine, and most probably it is the presence of this substance in the circulation, and the interruption by any causes, as cold and weakness of circulation, of the changes which it is undergoing in the capillaries and in the kidneys, that produces the phenomena of retrocedent and irregular gout. The acid state of the secretions of the skin, stomach, and urine in this disease, has led some physicians to consider acidity as the cause of this disease; such a state of acidity may also arise from a want of action of oxygen on the non-nitrogenous principles, that is, from the oxygen not being present in sufficient quantities. In health, when sufficient oxygen is absorbed, the acids formed from the non-nitrogenous food are converted into carbonic acid and water by combining with oxygen; but in gout the deficiency of oxygen renders those changes impossible, and the acids formed,

being but very imperfectly or not at all acted on by oxygen, remain in the body undecomposed till they are thrown out in every possible way. By soda, potash, or magnesia taken as medicine, these acids are neutralized, as well as by the carbonates of those alkalies which are decomposed, lactates or acetates being formed. Hence the benefit from alkalies in gouty complaints, but it is only palliative. Such treatment, however, will not prevent the formation of lactic acid; to effect which, all the substances from which this acid most readily arises, especially starch and sugar should be left off.

"By this action of oxygen, then, an explanation is afforded of the effects of weakness, excessive sleeping, excessive eating, of a want of exercise, as well as of inordinate muscular exertion, of vegetable acids, and of alcohol in the production of gout. For the weakness and inordinate exercise tend to the excessive production of uric acid, disposing to and causing rapid changes in the tissues. Sleep lessens the quantity of oxygen which can be absorbed, by lessening the number and the strength of the respirations, and in consequence the uric acid formed is not changed. By excessive eating the blood becomes loaded, and contains an excess of those principles which can only be carried off by the action of the oxygen. By acids the uric acid is rendered less soluble, and therefore less easily acted on. Wines are injurious from the alcohol they contain, and acid wines are doubly injurious by both acid and alcohol adding to the excess of non-nitrogenous substances, for which the oxygen has a greater affinity than it has for the nitrogenous substances."

The juvantia give additional strength to this view. We see abstinence alone will cure by giving no fresh fuel, the supply of oxygen remains undiminished and gradually consumes those non nitrogenous (carbonaceous) substances which had been previously so heaped up as to threaten to put an end to all action. Exertion increases the respiration, and thus causes more oxygen to be absorbed, and thus more action takes place.

Purgatives remove the bile, which contains an excess of carbonaceous matter, on which the oxygen would otherwise act to the hindrance of its action on the nitrogenous substances; whilst alkalies and water hold the uric acid dissolved, and promote the changes in the tissues. By these views the relation of gout to acidity, to uric acid, and oxalate of lime calculi, is most plain. They all arise from the same cause, the want of action of oxygen. The indications of treatment, as suggested by the theoretical views of Liebig, are thus summed up in the words of Schonlein: acil.

1st. To neutralize any diseased products which may be formed.

2d. In proportion as they are formed, to cause them to be removed, in order to prevent any accumulation which may cause a paroxysm.

3d. To render the formation of any fresh diseased products impossible.

On the Oxalic Acid Diathesis; and on the Production of Oxalic Acid from Uric Acid.

If we understand our author here, and we are not quite certain on the point, he says that though from the examination of urinary calculi in different collections, those which contained oxalate of lime bore a very considerable proportion to those in which uric acid was present; and though the former has even been found in some, more frequently than the latter, yet the number of patients who suffered from the oxalic acid diathesis seemed

to bear the greatest disproportion to the number of those in whom the uric acid diathesis existed. The intermixture, and alternation also, of oxalate of lime with urate of ammonia or uric acid, was found to be very frequent in calculi. These facts could not be accounted for. The one seemed to point to some intimate relation between these substances; whilst the other seemed to prove that, whenever oxalate of lime was formed, it almost always remained, and produced a calculus. The probability of the first conclusion had been shown by Liebig. This diathesis has been generally recognized in consequence of small calculus of oxalate of lime being passed. Now, however by means of the microscope, the physician may much sooner obtain evidence of the diathesis, which will be rendered all but certain when a substance is obtained which does not effervesce when mixed with a dilute acid, though it does so after a moderate heat has been applied, and again ceases to do so after exposure to a strong heat, with which the ash becomes alkaline, and when dissolved in water gives a white precipitate with oxalate of ammonia.

On the Production of Oxalic Acid from Uric Acid.

When mentioning the changes which uric acid undergoes, it has been stated that oxalic acid may be actually produced from uric acid by being subjected to the imperfect action of oxygen; this will in some way prepare us for the apparently odd occurrence of the frequent intermixture in calculi of urate of ammonia and oxalate of lime. In the oxalic acid diathesis, the oxydizing process in the body is carried a step further than it is when the uric acid diathesis exists; but it still is stopped short of the extent to which it is carried in the state of health. From this we may deduce rules for the prevention of this diathesis, the object being to increase the action of oxygen on the uric acid, by which it may be changed into carbonic acid and urea. The rules for accomplishing this have been already given. Whilst the treatment of the uric acid diathesis was sufficiently well known, that for the prevention and cure of oxalic acid diathesis was entirely unknown, in consequence of the usual origin of the oxalic acid itself being unknown. Oxalic acid patients were prohibited the use of sugar from the circumstances of nitric acid producing oxalic acid by its action on sugar; other practitioners again prohibited their patients the use of lime. "We can hardly," says our author, "expect any benefit from these rules, when it is known that the usual source of the oxalic acid is from uric acid, and that it is absolutely impossible to abstain from lime in some form or other, as it exists in almost everything which is taken as food and drink. 2d. Though it is possible that sugar and perhaps other substances of the non-nitrogenous class, may, by imperfectly combining with oxygen in the body, give rise to oxalic acid (and it will be especially interesting to inquire whether this takes place at any time in the course of diabetes, or in diseases related to this, in which there seems to be a want of oxydation of the non-nitrogenous substances,) still the oxygen has evidently a much stronger affinity for the non-nitrogenous than for the nitrogenous substances in the body, and thus the process of oxydation is far more frequently incomplete in the latter than in the former; so that we should expect oxalic acid generally to arise from the insufficient oxydation of the uric acid, and much more rarely from sugar; and the alternation of this substance with uric acid in calculi, and the ease with which it

is formed from uric acid, leads to the belief that this is the usual origin of oxalic acid. The free oxalic acid passing off by the kidneys meeting with the phosphate of lime, which is secreted both by them and by the mucous membrane of the urinary passages, decomposes it, and oxalate of lime is the result." The same thing happens, when oxalic acid is taken, as such, in the food; if free, like tartaric acid, it passes off at the kidneys, and combines with the lime, which it afterwards meets. If taken in combination with alkalies, like tartaric acid, it would probably be decomposed. Thus, the causes of this disease are generally similar to the causes of the uric acid diathesis, both being referrible to insufficient oxydation and accordingly both requiring similar treatment; there is one point, however, requiring particular notice, and this is the lime. It is evident that, if no lime were taken into the system, no oxalate of lime could be formed, some lime, however, is necessary for the bones and membranes, and it is taken into the system in all solid and liquid food. Now, though it is impossible to obtain food absolutely free from it, and thus to hinder the formation of fresh oxalate of lime, yet by rendering it as free from it as possible, the rapid increase of a calculus may be prevented. Water is the thing most easily purified, and yet it is probably that which contains most lime. So that in the oxalic acid diathesis distilled water should be invariably used. When that cannot be had, rain water should be used. The curative treatment, however, must be directed to the oxalic acid, not to the lime.

On the Phosphatic Diathesis.

This may be divided into a true and a false diathesis: the true being that in which, in consequence of a general state of the system, the urine becomes alkaline and the phosphates are deposited; the false being that in which alkalescence ensues from an obstruction to the urine, or from the mucous which is secreted, rapidly inducing a change in the urea,—as when there is irritation or inflammation of the mucous membrane of the bladder. The false phosphatic diathesis is far more common than the true. In both, the urine is alkaline, and there is a white deposit readily soluble in any dilute acid, but not soluble by heat or alkalies. In this diathesis it is not uncommon to observe a layer of crystals on the surface of the water, which, on exposure to light, presents a varied play of prismatic colours. These consist also of the phosphates.

Phosphorus, phosphoric acid, lime and magnesia, are carried into the circulation of men and animals, partly in their food, and partly in their drink. In these they exist in organic or in inorganic compounds. In vegetable and animal albumen no difference can be observed, even in regard to the presence and relative amount of sulphur, phosphorus, and phosphate of lime. In vegetables we find organic acids combined with lime and magnesia, and in them, phosphates, carbonates, sulphates or chlorides of lime and magnesia are universally present. Most seeds contain certain quantities of the phosphates. There is an abundance of the phosphate of magnesia in the seeds of different kinds of corn. The concretions in the cœcum of horses consist of the phosphate of magnesia and ammonia, the greater part of which is obtained from the oats and bran consumed as food. When the supply of phosphorus, lime, or magnesia is no greater than is required in the body for the bones, the brain, and the membranes, none appears in the urine, as in horses' urine.

The two sources of phosphoric acid in the blood are 1st, from the food, and, 2dly, from the oxydation of the phosphorus of the tissues; when from these sources an excess exists in the blood, it is thrown out in the urine; and when this is the case there is an additional quantity thrown out by the secretion which takes place from the mucous membrane; for the mucous of all membranes is found to contain salts of lime, and in most cases phosphate of lime. The deposit on the teeth from mucous and saliva contains 79 per cent. of phosphate of lime. This substance in also to be found in the mucus of the bladder and urinary organs. The phosphates, whether derived from the mucus or from the secretion of the kidneys are insoluble in any alkaline fluid; but very soluble in any diluted acid. The urine being, in its healthy state, always acid, these salts are always held in solution, and they remain dissolved until the urine becomes alkaline; which may occur either by taking alkalies, or by the urea becoming converted into carbonate of ammonia. In producing this latter change of the urea the mucous is considered to act as a short of ferment. In the healthy state this action of the mucous does not occur until after some hours of exposure to the action of the air; but when the secreting membrane is inflamed, the mucous seems to undergo this change much more rapidly.

"The urine is also found to be alkaline, even when it passes from the kidneys in states of great weakness, and after injury of the spinal cord. In weakness, the sulphuric and phosphoric acids, produced by changes in the albuminous tissues, are formed in exceedingly small quantities. These acids are no longer sufficient to convert all the carbonate of lime into sulphate and phosphate, and consequently the carbonate of lime appears in the urine, or is deposited if a nucleus exists. Hence it is, probably, that we so frequently find small quantities of lime in phosphatic calculi. In very great states of weakness, the changes in the tissues are so slow that the smallest quantities of phosphates are produced, and then, though the urine becomes alkaline, still no sensible deposit is found in it. This may be frequently observed in the last stage of Bright's disease, in which, as appears by Dr. Christison's quantitative analysis, the formation of phosphates is greatly diminished; when it will be found that, though cream of tartar may be given so as to render the urine highly alkaline, still it will remain entirely free from any deposit. In injuries of the spine producing paralysis, the urine occasionally is rendered alkaline, in consequence of retention in the bladder giving time for the mucus to undergo its changes. In whatever way the urine becomes alkaline, the phosphates being insoluble in an alkaline fluid, are precipitated, and either form a concretion in the bladder, or are deposited from the urine as a white sediment, which is easily solubly in very dilute mineral acids, and does not disappear even with a strong heat. It is not improbable that, during excessive action of the brain, the phosphorus of the nervous tissues must occasion a great quantity of phosphoric acid."

We have now given a tolerably full analysis of this book, which has been the first attempt to reduce the valuable principles contained in Liebig's Chemical Physiology to practical purposes. We cannot help saying that we regret the author did not put some of these principles to the test of experiment before this work made its appearance. He would thus have recommended it to the profession, by that which is one of the strongest of all recommendations, we mean that of experience. Trusting he will take every opportunity of so doing, and thus remove that air of crudity from the work which it now has, before a second edition is called for, we take our leave of him for the present.

Clinique Chirurgicale de l'Hôpital de la Pitie. Par *J. Lisfranc.* Tome Second, 8vo. pp. 738. Paris, Bechet, 1842.

Our readers will doubtless learn, with much regret, that the distinguished author of the present volume has been for some time past, and still is, labouring under a very distressing and obstinate malady. It has hitherto, we are sorry to say, baffled the best efforts of his professional brethren in his own country; and, from this circumstance alone, there is but too much reason to fear that it has already taken so deep a root in his system, that it may defy every remedial resource of the healing art. At the close of the present article, we shall state at full length the opinion which we have formed of the malady that has so long afflicted M. *Lisfranc*—perhaps we should rather say his family and friends—and explain the course of treatment which we have recommended to be tried. Meanwhile we proceed with our duty, as Reviewers, to examine his last published volume—rich in many novel views on pathology, and containing much curious information. We have rarely met with a work that is so truly a transcript of an author's character as the present one.

In the first place, let the title of the volume be remarked:—"Clinique Chirurgicale de l'Hôpital de la Pitié," or, in other words, bed-side reports of surgical cases in La Pitié Hospital, with comments thereon.

The table of contents presents us with a catalogue of the following subjects:—

Tumours of the mammæ—surgical anatomy of the female organs of generation—pruritus of the vulva—excessive sensibility of the generative organs—diseases of the womb—manual examination and the use of the speculum—leucorrhœa, chlorosis, menstruation, amenorrhœa, menorrhagia—prolapsus of the vagina, nymphomania, hysteria, metritis, hypertrophy and enlargement of the womb, &c. &c.

We think we hear some one saying, what the deuce have most of these subjects to do with clinical surgery? This is not very obvious, we must confess; but pray, be not hasty, courteous reader; reserve thy judgment till thou hast perused with attention what M. *Lisfranc* presents to you; and, we are much mistaken indeed, if you will not then confess that a new fountain of thought, which you never dreamed of, has been opened up to you—a fountain from which your author says that you may freely draw streams of health and happiness for suffering humanity.

Without further preface, we shall proceed to a brief notice of the contents *seriatim*.

The *first* chapter on Tumours of the Mamma, although it occupies upwards of 120 pages, will not detain us long, as we have more than once of late discussed this subject at considerable length.

There is, moreover, another reason: it is no easy thing to convey to the English reader an accurate idea of a Frenchman's writings on scirrhus, and those diseases which are apt to be mistaken for it, in consequence of the indefinite meaning that is attached to that term. Scirrhus, according to almost all English writers, is a peculiar degeneration of

(usually glandular) structure, which is rarely or never dispersed, and which usually terminates in cancerous ulceration; whereas nothing is more common in French writing, than to read of *scirrhous* tumours—by which can be meant only indurated swellings—being cured.

A few gleanings, however, from M. *Lisfranc's* remarks must be given. Like every experienced surgeon, he candidly admits the exceeding difficulty of forming an accurate diagnosis in many cases; but he surely goes rather too far when he asserts that "the efforts, which pathology has hitherto made to discriminate the various kinds of mammary tumours, have been almost always both useless and even hurtful." We, however, most perfectly agree with him in the spirit of the following remarks:—

"Many persons in the present day," says he, "with the view of appearing men of genius, pretend that it is quite necessary to re-construct the edifice of science from its very foundation. Setting themselves to work, they begin to divide, sub-divide, and multiply diseases without end; and they assign to each of the multitude distinctive characters and physiognomies—which, according to them, may be readily recognised, but which in truth are utterly fallacious. These are most pernicious errors, which cause science to retrograde, instead of making any sure advances."

M. *Lisfranc* then discusses, with considerable minuteness, the various alleged causes of scirrhous development. He combats, and we have no doubt rightly, the favourite notion of many modern pathologists, that the disease is generally the product of irritative or inflammatory action. While he admits that this may be true in certain instances, he distinctly states that "he has seen not a few cases, where the mamma had become affected with genuine scirrhus, but where it was utterly impossible to recognise the operation of any obvious cause whatever. The surgeon must be on his guard not to be misled by the reports of the patients themselves, as they have always a tendency to refer their complaints to some supposed external agency."

M *Lisfranc* is of opinion, that the universal use of stiff corsets by women, in France and other countries, has much increased the frequency of mammary tumours.

There can be very little doubt that the compression, often irregular and unequal, of the breasts by stays must aggravate, if it does not positively excite, the morbid action which gives rise to scirrhous and cancerous disease. Those, who are fat and short-necked, squeeze and bind down the mammæ as much as they can, to improve their figures; while their lean sisters, who have not much bosom, try to make one for themselves, by tightening the corset below the breasts, so as to push them upwards as high as possible.

With respect to treatment, probably most of our readers are aware that M. *Lisfranc*—although, as we have already seen, not an advocate of the inflammatory origin of scirrhus—has for many years strongly insisted on the advantages that may often be derived from diminishing vascular action in retarding the development of this disease.

The means *par excellence*, according to his experience, to prevent engorgements of the mammæ, especially in women whose catamenia used to be abundant, is unquestionably an occasional bleeding from the arm.

This may be practised once or even twice every month for some time, and then less frequently.

Many of the older surgeons approved of this plan. *Heister* knew the advantage of such treatment; for, in his Institutions of Surgery, we meet with the following passage: "*Non omissis, ubi sanguinis Copia urget, missionibus sanguinis, scarificationibus necnon venæ sectionibus, verno atque autumnali præsertim tempore instituendis. Quæ si negligantur, facillime scirrhus et carcinoma aut ulcus cancrosum redeunt.*" It would be easy to multiply authorities on the propriety of this practice. *Paré, Ledran, Petit, Pouteau*, and many other celebrated writers, have all highly praised bloodletting and the use of other parts of the antiphlogistic regime in the treatment of scirrhus affections. The occasional employment of warm baths, and the establishment of an issue in the arm are also very useful means in preventing not a few of the diseases that are apt to occur, at what has been called "the critical period" of life in woman. The repeated application of leeches around the affected mamma, followed by soothing poultices or mild lotions, the anointing of the mamma with a thick layer of mercurial ointment, and the internal administration of the *conium* are highly recommended by our author in certain cases of scirrhous disease. If the constitution of the patient be scrofulous, the ioduret of potassium should be combined with, or substituted for, the hemlock.

When all symptoms of irritative and inflammatory action are got rid of, we should then cautiously try the effects of discutient remedies. M. *Lisfranc* has been using of late years with decided advantage, he says, friction with the ointment of the ioduret of lead—one part to eight of lard;—a piece, the size of a filbert, is to be gently rubbed on the mamma every evening. A few grains of opium may be occasionally added to this ointment with advantage.*

When the engorgement is very chronic, the *pommade* recommended by *Dupuytren* may be now and then used with benefit; it consists of one part of muriate of ammonia blended with six or ten of simple mercurial ointment. Local vapour baths may be employed at the same time. M. *Lisfranc* has seen admirable effects in a few cases from the administration of calomel combined with opium, so as to affect the system. He very justly adds that, whatever remedies, whether internal or external, we may have recourse to with the view of discussing chronic scirrhous engorgements of the mammæ, we should at once suspend their use, if the slightest symptoms of local inflammatory action supervene. This is a most important rule to be attended to in the management of all diseases that have a tendency to assume a malignant character; and it is by surgeons having neglected to attend to it, that so many really useful remedies have at various times fallen into disrepute. We have plenty of remedies, if we knew but *when* and *how* to use them.

M. *Lisfranc* proceeds to discuss the propriety of excising the mamma,

* The ointment of the ioduret of lead is much less irritating to the skin, according to M. *Lisfranc's* experience, than that of the ioduret of potassium; and, as its discutient properties are quite as powerful, it may be preferred on most occasions.

when the use of the means now recommended has proved, after a fair trial, quite inefficacious. He protests against the ignorant haste with which many surgeons of the present day at once resort to the knife in all cases where they suspect the existence of scirrhous disease, and frankly acknowledges that he himself, as well as *Dupuytren*, Sir *A. Cooper* and others, have more than once extirpated breasts, which on dissection have proved to be very little altered. He quotes the interesting case of abscess situated in the cellular texture behind the mamma, between the gland and the pectoral muscle, recorded by Mr. Henry James Johnson, as a good instance how readily other diseases of the gland may be mistaken for scirrhous."* The success of the operation will much depend on the cause of the disease, whether this has been local or constitutional, and on the state of the system at the time, &c. It is scarcely possible, he remarks, to lay down any positive instructions to guide the surgeon in forming his opinion; as in each case there is some peculiarity, either favourable or otherwise, that must be taken into account. There is one observation made by our author at this point, that well deserves to be remembered by all the sons of Esculapius: (would that they might lay it to heart)—"the words *always* and *never*," says he, "ought to be expunged from every work on pathology or therapeutics." There is much wisdom in this sentence; the truly skilful surgeon seldom or never dogmatises. Some writers have gone so far as to condemn the operation of excising the mamma under almost all circumstances: this opinion is extravagant, and we need not therefore stop to expose its fallacy. But there is a question on which considerable difference of opinion still exists: viz. when the lymphatic glands in the neighbourhood of the diseased organ are enlarged, ought they to be always excised? and, if they cannot be reached, should the operation not be undertaken at all? Much will certainly depend upon the peculiar circumstances of each case; but it is right that every surgeon should know that the enlarged glands in the neighbourhood of a scirrhous tumour are not necessarily of a malignant nature, and that often they will subside, and even entirely disappear, after the latter has been removed. The experience of our author, as well as of *Dessault*, *Assalini*, &c. appears to be decisive on this point. Those, who wish to know the sentiments of M. *Lisfranc* on this important question at full length, will do well to read his "Considerations on Cancer," in the 1st volume of his present work.

We shall proceed therefore to the next chapter, which treats of the surgical anatomy of the female organs of generation. M. *Lisfranc* (strange to say) commences his remarks, by disclaiming all imputations of immodesty in discussing the subject in question; his only motive being, he tells us, "the sacred interest of humanity:" this is truly à la Française. As might be anticipated, the greater part of his observations are really quite unnecessary, and totally uncalled-for in a work like the present. How an author, like M. *Lisfranc*, could have for one moment dreamt of filling his book with such common-place descriptions as occupy no less than 28 pages, puzzles us not a little to conjecture. One result however of his experience may not be known to many of our readers, and we shall

* Vide Medico-Chirurgical Review for April, 1841.

therefore mention it—it is this; that, after the catamenia have entirely ceased to return, the vagina not unfrequently becomes so contracted, especially at its uterine extremity, that it is almost impervious. This circumstance should be kept in mind, in cases of suspected uterine disease, where the speculum may be had recourse to. We may here allude to another fact. Immediately before, and during the continuance of, the catamenial flow, the os uteri is found to be considerably more patent than at other times. It may therefore be of advantage, in cases of suspected polypi, to make the examination just before the usual time of its recurrence.

M. *Lisfranc* asserts with no little confidence that, when the cervix of the womb is much elongated and very conical, the woman is always barren. "If examined with the speculum, the apex is sometimes found to be so small as not to exceed a line or so across, and the os tincæ is so minute as to look like an aperture made with a small drill." He tells us that, in several such cases, he has enlarged the orifice with a *lithotome caché;* and that more than one of his patients conceived soon afterwards, although they had been long married, but had never been pregnant before. Our author very naively asks, "Will this operation be received into the domain of surgery?" Experience alone can decide "*cette grande question.*" Are our readers aware of the following circumstance? M. *Lisfranc* says that the uterus, in the ordinary state, is very much more moveable than is generally imagined, and that it may be drawn down to the orifice of the vagina, in most cases requiring operations on its cervix, as in the tying of polypi, resection of cancerous growths, &c. The following are our author's own words:—

"There is a physiological fact of importance, but little known, and which hitherto has scarcely been alluded to by any writer. The uterus in the normal condition, and even when affected with engorgement, has a truly extraordinary mobility. To prove this, a very simple experiment will suffice. Let a speculum be introduced as high up the vagina as possible, so as to embrace the cervix uteri within its upper extremity; then bid the patient bear down, as if at stool; and you will perceive that, as the instrument descends, the uterus follows it, to the extent of one or even two inches—an immense advantage when the surgeon wishes to bring down the uterus to near the vulva. In cases requiring operation about the cervix, all that the surgeon has to do is to lay hold of the os uteri with a hook and draw it gently down, until it comes fairly within sight; this may be usually effected without difficulty, and with very little inconvenience to the patient. * * * * Since the womb is thus capable of considerable descent into the vagina under the expulsive efforts of defecation, it is obvious that it must be forcibly applied against any hardened feculent matters lodging in the rectum, and therefore that any tendency to prolapsus must be much increased by straining at stool."

Pruritus of the Vulva is a not unfrequent and a most distressing complaint. In the treatment of it, M. *Lisfranc* places his chief reliance on an occasional bleeding from the arm. Lotions of alum, or of nitrate of silver, are sometimes very useful; but on the whole, M. *Raspail's* remedy—five parts of starch and one of camphor—is still better as a local application. It may be applied two or three times a day; the proportion of the camphor should be made to vary, according to the irritable state of the affected parts. Fumigations with the vapour of sulphur will sometimes effect a cure, when

all other remedies fail. Let it ever be remembered that pruritus of the vulva is not unfrequently connected with some morbid affection of the uterus, and therefore that our chief attention must be directed to the removal of the cause. An opiate enema is sometimes a valuable remedy. M. *Lisfranc* alludes to a very obstinate case, where a very rapid cure was obtained from the administration of sulphate of quinine, after other means had quite failed. In all cases of irritation of the generative organs, M. *Lisfranc* prohibits the use of tea and coffee, more especially of the latter beverage,—which, according to his observation, exercises a marked influence on these parts. These are his words :—

"My opinion on this important point of hygiene is very decided. During several years, I alternately allowed and prohibited the use of coffee to my uterine patients in the hospital; and I *invariably* remarked that, when taken, it brought on or aggravated leucorrhœal discharges, and that these abated or ceased altogether, when the use of the coffee was discontinued."

We must not attach too much importance to this remark ; like all medical precepts very authoritatively laid down, it should be received with a good deal of reservation. By-the-bye, how has M. *Lisfranc* already forgotten his own very wise saying that the words *always* and *never* should be erased from medical writings? That coffee, especially if drank strong and with boiled milk, is a heating and often too an astringent beverage—boiled milk is almost always so, and is, by-the-bye, a not unfrequent cause of many children's diseases—is probably known to every one ; it is therefore scarcely admissible when any inflammatory or febrile state of the system exists. But that it is injurious in most cases of leucorrhœa is a sad mistake, and one which is altogether attributable to M. *Lisfranc's* idea—certainly an erroneous one—that this discharge is almost always connected with an engorgement of the cervix uteri. For our own parts, we have by experience come to the very opposite conclusion ; viz. that coffee is often a very serviceable beverage, in conjunction with other roberants, in checking leucorrhœal discharges ; whereas, on the other hand, tea, being, decidedly a debilitant in relaxed enfeebled states of the system, is apt to aggravate them.*

We may here introduce a remark or two on the all-important topics of the *toucher*, or the manual examination of the uterus, either per vaginam

* In almost all cases of protracted dyspepsia, especially when there is what is called a *craving* at the stomach, in hysterical weakness, nervous palpitations of the heart, &c., the common practice of taking large quantities of hot tea, generally twice a day, is certainly very injurious. There is, however, no set of cases in which it is altogether so hurtful as in those anomalous complaints, paralytic and neuralgic, of the nervous system, that are so common in unmarried females. We have repeatedly observed that the mere discontinuance of this favourite beverage of such patients—some of them live almost entirely upon *their tea*—has been attended with immediate benefit. The use of coffee—infused and filtered, not boiled—or weak cocoa, should be substituted in place of the trashy hot liquor that young ladies are usually so fond of. We verily believe that the use of tea has produced almost as much illness in this country as the opium, which we are so unjustly forcing upon poor John Chinaman, has among the subjects of the Celestia Empire.

or per rectum, and the use of the speculum. No one, who does not read M. *Lisfranc's* writings, can form any idea of the importance which he attaches to these means of exploration. He alludes to the tens of thousands of women whom he has examined in both ways, and frequently mentions the truly astonishing tact which he has now acquired! His advice on this subject may be summed up in these few words: "touch, see, examine and *speculate*."

But even, although a manual examination be made, many physicians will be unable to recognize an existing disease of the uterus. Few, according to M. *Lisfranc*, understand how to perform it properly. It is a great mistake, he says, to suppose that it is so simple an operation: he considers it to be "une des manœuvres les plus difficiles de la chirurgie," and does not hesitate to affirm that "avant nous" (*i. e.* himself) no writer has given proper instructions on the subject. He devotes an entire chapter to it. Our readers will not expect us to analyse its contents. Suffice it to say that he recommends, in certain cases where the diagnosis is obscure, that the entire hand should be introduced—"a mode of exploration by which women are not much incommoded, provided it is done with *les menagemens convenables*."

He gives particular directions also how to examine the state of the uterus by passing the finger into the rectum, in the case of young girls; and we shall afterwards find some remarkable discoveries which he made by following this practice.

The mere examination with the finger should rarely supersede the use of the speculum at the same time: at least, so says M. *Lisfranc*, and so French women are made to believe. Those, who imagine that the speculum may usually be dispensed with, commit a strange error—an error engendered by successive *amour-propre et forfanterie*. He prefers the simple tubular speculum—with or without a plug—to any of the more complicated instruments that have been devised. In some cases, the orifice or the canal of the vagina may be so contracted as to render it necessary to divide the *debridement* with the scapel, before the speculum can be introduced.

Before passing on to other topics, we select a short extract to give our readers some idea of the truly workmanlike manner in which M. *Lisfranc* sets about detecting the seat of disease; and with him there is no careless trusting to merely looking at the tongue, feeling the pulse, and putting a few questions, &c. Alluding to a case of dysmenorrhœa, he says; "I practised the *toucher* on the hypogastric region, also by the rectum and by the vagina; I examined the vulva with the greatest attention; I applied the speculum; all the genital organs appeared essentially normal. I inspected the urine; I introduced a sound into the bladder; I carefully explored the ureters and the kidneys, as well as other abdominal viscera; but I could nowhere discover any morbid phenomenon."

Frequent Mistakes in the Diagnosis of Uterine Diseases: such is the title of the fourth chapter.

M. *Lisfranc* considers himself as, in some degree, *the* authority "par excellence," on all questions connected with these maladies, and he there-

fore delivers his opinions with the *ore rotundo* of the professor who has an especial duty to watch over "l'honneur de notre noble profession."

As might be expected, he attributes a vast number of women's complaints, referred by themselves and by their ordinary medical attendants to their stomach or bowels, or mammæ, or kidneys,—to the uterus: this organ; according to him, being the "fons et origo" of almost all the ills to which they are exposed.

Some years ago, it was *gastro-enterite* on all occasions; now *l'engorgement de l'uterus* has entirely superseded, at least with our author, poor old *Broussais'* great discovery!

It will be necessary, therefore, to receive most of the statements in the present volume with no inconsiderable reservation: a *one-disease* doctor has, it is well known, always "un peu trop d'enthousiasme" on his favourite subject to be a safe authority. His description of the difficulty of persuading many women that there is anything the matter with their womb, when their chief uneasiness happens to be seated entirely elsewhere, is really very amusing.

. . . . . "When I first propose," says he, "to use the usual means of investigation, viz. manual examination and the speculum, they generally at once refuse with a sort of disdain, and leave my 'cabinet de consultation' with the idea that I am quite mistaken in my suspicions, notwithstanding all my efforts to convince their reason and excite their fears as to the consequences. They return home; they begin to think; and now it is, when surrounded by the solicitudes of their husbands and relatives, they make up their minds to my wishes: they come back to me in a few days; apologise for their previous refusal; and seem then to sacrifice themselves to a preconceived idea:"—(what possibly is the meaning of all this?) As a matter of course, an engorgement of the uterus is discovered; proper remedies are resorted to; it is cured; and all the other *pretended* maladies of the kidneys, stomach, bowels, &c. vanish with it. Really some of the stories related by our vivacious neighbours in the present day are worthy of the pages of that doctor-mocking rogue, their own immortal author of the Malade Imaginaire.

M. *Lisfranc* enumerates the following diseases of other organs as most apt to be mistaken for engorgement of the uterus: pains in the rectum—pains in the flanks and loins—chorea—epileptiform attacks—mental alienation—hysteria—paraplegia—nymphomania—leucorrhœa—palpitations of the heart—obstinate sciatica—diseases of the bladder—pains about the umbilicus—diseases of the digestive organs—lumbago and *foiblesse des reins*—various affections of the mammæ—neuralgic headaches—amaurosis—hypochondriasis—chlorosis—dysmenorrhœa—hysteria, &c. &c. Besides these, he regards most cases of prolapsus uteri as attributable to a chronic engorgement of the organ, its increased weight being then the cause of its descent; "indeed, (says he,) we require but the simplest notion of physical laws to admit the fact, and that man must be deeply infected with medical errors who rejects it:"—a pretty summary mode of silencing all objections! Some cases are related where a full twelvemonths was required to get rid of the engorgement; but then, to make amends for this delay, the prolapsus, we are told, was cured at the same time.

To do our author justice, we must give two or three examples reported in his work, that our readers may judge for themselves of French—perhaps we should rather say M. *Lisfranc's*—practice in some of the more common diseases that fall under a medical man's notice.

The first shall be one of *Chorea.*

A girl, 18 years of age, had been affected with this malady for three years; it had resisted all "les moyens ordinaires" that had been assiduously used: (these, however, are not stated.) Menstruation had been irregular during the whole of the time. M. *Lisfranc*, on being consulted, had recourse to the treatment recommended by M. *Serres*, which has produced such brilliant success in a multitude of cases: from 15 to 25 leeches were applied every eight or ten days on the sides and back of the neck, and narcotic remedies were administered internally: (no treatment, by-the-by, can possibly be worse, in most cases.) But little benefit was obtained. M. *Lisfranc* now, observing that the remedies given to act on the uterus aggravated the nervous symptoms, and hearing that his patient complained of pain and uneasiness in the pelvis, suspected that the uterus might be the offending organ.

He therefore proposed an examination by the rectum? but the proposal was rejected with "une sorte d'effroi." The attacks of chorea continued to be as frequent and severe as ever. At length the patient consented to an examination; and the uterus was found to be at least twice its normal size! An appropriate treatment was immediately commenced with the view of reducing this morbid condition of the organ; viz. occasional detraction of blood, the internal use of the ioduret of potassium, frictions on the groin and hypogastrium with the ointment of the ioduret of lead, warm baths, gentle aperients, &c. In the course of two months the engorgement of the uterus ceased, and all the symptoms of chorea had quite vanished.

The only comment, which we shall make on this report, is in the way of inquiry:—Can the size of the uterus be rearly discovered by the finger introduced into the rectum alone?—we ask for information.

We shall now take an instance of Paraplegia.

An unmarried woman, 45 years of age, had for six months been affected with a palsy of the lower limbs, which was attributed to a fall upon the hips. "I found," says M. *Lisfranc*, "that the catemenia had been long scanty and irregular, and that, for a considerable time before the date of the accident, the patient had experienced a sense of weight and occasionally of heat also in the pelvis. I made an examination, and found that there existed a very considerable engorgement of the uterus. The treatment, which was adopted to remove this state, proved perfectly successful, and the paraplegia also was entirely cured." How long do our readers suppose that this good maiden lady was under the doctor's hands?—only *fourteen months!* Did it never occur to M. *Lisfranc* that the paralysis in this case might possibly be owing to the effects of the contusion on the lower part of the spine? and that his usual remedies, the occasional application of leeches, friction with ioduret of lead ointment, the internal use of iodine, &c. might have acted on the seat of the injury?

A third case, that we shall give, is one of the most extraordinary—in reference to its treatment, we mean—that has come under our notice for a length of time. It is adduced as an instance of uterine disease producing palpitations of the heart!

A girl, 20 years of age, was labouring under deep ulceration of the cervix uteri, which had all the characters of cancer. It had been repeatedly cauterised, but without effect; and, as the patient's general health had begun to give way, excision of the diseased part seemed to be the sole means of saving the life of this "malheureus femme."

The only objection to the operation was, that from the tumultuous action of the heart, and the character of the sounds heard on auscultation, it was suspected that there was an aneurysm of this organ. But as the diagnosis of this disease was considered by the doctors in attendance as not "toujours très-certain," and as patients have been known to live many years with such an affection, it was at length resolved to extirpate the neck of the womb, as affording the best chance of at least prolonging life. This was accordingly done, and no accident occurred during the operation. The severe pains, from which the poor woman had so long suffered, were, we are told, at once relieved, and on the very first night she experienced "un calme, un bien-etre qui nous frappa tous du plus vif etonnement." The palpitations of the heart speedily abated and had quite ceased by the sixth day: "le pretendu aneurisme n'existait plus." The woman entirely recovered her health, became pregnant, and was safely delivered of a living child.

As we are in an interrogatory mood, we shall suggest one or two queries about this case to our readers. Was the ulceration of the cervix uteri at all malignant? If so, was repeated cauterisation a judicious practice? Were the signs of genuine aneursym of the heart really present?; we read indeed of its "mouvements tumultueux" and of the "bruits qui appartiennent à l'hypertrophe du ventricle gauche;"—And, lastly, was excision of the os uteri necessary, or even prudent, under all the circumstances of the case?

Several chapters intervene between the chapter in which the preceding cases are recorded, and that on leucorrhœa; but as the author seems not to have followed any obvious plan in the arrangement of his work, we need not be very particular in our selections, especially as the *refrain* of the tale is always pretty nearly the same.

Leucorrhœa.—The following most *lucid* exposition of the ætiology of this very common complaint is given by M. *Lisfranc.*

"This disease is produced either by a phlegmasia, or by an irritation, or by an injection, or, perhaps, by a sanguineous fluxion, which may exist, at one and the same time, in the vulva, the vagina, the internal surface of the uterus, and the ovarian tubes, whence arises a white-coloured discharge."

We verily believe that, for once that it is owing to any increase of vascular action—be the name that we give to such a state what it may—it is in nineteen, or ninety-nine cases at least, dependent upon weakness and atony of the vessels of the mucous membrane affected. Let it not be imagined that we altogether repudiate the idea that certain pale-coloured

discharges from the vagina are connected with an inflamed state of the neck of the uterus: we know—and where is the medical man of any experience who does not?—that such cases are occasionally met with; but then they form the exception, and not the general rule. In what class of females is leucorrhœa most frequent?—Is it in the robust and the plethoric? or is it in those who are weakened by poor diet, by over-frequent gestation, or by excessive suckling? So common is the complaint among the lower orders in large cities, that we have no hesitation in saying that, in every dozen of middle-aged married women, there are at least eight, if not more, affected in a greater or less degree with leucorrhœal discharge.

But it is unnecessary to address arguments to the English physician on this subject, as very few are likely to be misled by the fantastic notions of many continental writers. Let us now, therefore, resume our travels through the Clinique Chirurgicale of the La Pitié Hospital Professor, who, if not a very wary or safe, is often a very amusing guide.

After the very satisfactory definition of leucorrhœa given above, our author informs us that it seldom occurs in the ovarian tubes,—a most interesting piece of information certainly, and nearly as instructive as that recorded by the traveller, that "water-mills are not often seen on the tops of mountains."

The disease, we are also told, is sometimes epidemic: we much doubt it. True, there is no good reason why the mucous membrane of the vagina and uterus may not become, in certain states of weather, the seat of irritation and subsequently of increased discharge, just in the same manner as we observe the bronchi to be affected in influenza, and the bowels in dysentry: all this is possible; but where are the trustworthy authorities for believing it?

With much greater truth, menorrhœa may be said to be *endemic* in certain places—as, for example, in all large cities—than *epidemic* at certain seasons.

The disease is aggravated, if not induced, by the injudicious use of some articles of food.

"One of the most potent causes (in Paris,) of *fleurs blanches* is, unquestionably, the use of coffee with milk." This is one of the very original remarks for which we are indebted to M. *Lisfranc*. We have already expressed our own opinions on the subject, and would not have mentioned it again, were it not to communicate "un fact très remarquable," which our author recommends to our profound meditation.

"If a woman," he says, "is in the habit of drinking her coffee pure, even although milk be taken afterwards by itself, she usually experiences no particular influence on the generative organs; but let her try the use of *Café au lait*, and ere long she will become affected with a leucorrhœal discharge." (!)

With respect to the treatment of this very obstinate complaint there is not much novelty in the directions given by our author to comment upon.

Whenever we have reason to suspect any inflammatory condition of the uterus, it will certainly be well to take a few ounces of blood away, either from the arm, or, what is generally better, from over the sacrum by means

of cupping. M. *Lisfranc* disapproves of leeches applied about the vulva, as tending, he says, to cause a derivation of blood towards the generative organs; and we believe that he is quite right here. He seems to think highly of the virtues of balsam of copaiba, and of cubebs powder—"ces precieux medicaments"—in many cases of leucorrhœa: the latter is a favourite remedy with several British practitioners, and is much recommended, if we remember aright, by Dr. *Billing* in various uterine ailments. The internal use of the ioduret of potassium is, in our author's opinion, "un moyen extrordinairement avantageux," when the disease is chronic, and the patient's constitution is not good: he employs it, he says, very frequently in his practice, and obtains effects which quite surprise him.

It is scarcely necessary to allude to any of the local remedies which are in common use; a lotion with the sulphate of zinc, or with alum, is perhaps as good as any; and if these fail, we should try the nitrate of silver. In our own (*Rev.*) practice, we have for some years past been in the habit of using the sulphate of zinc, usually along with quinine, as a tonic internally—a grain of each, in the form of pill, twice or thrice daily—and the dilute sulphuric acid at the same time. One very important therapeutic rule is to interdict the drinking of warm fluids, and more especially of tea—that favourite and most pernicious beverage of most ailing women. Shower-bathing is an admirable remedy in many cases.

Chlorosis.—Our author is surely not a good master at fence; else he would not expose himself so unnecessarily to the thrusts of his adversaries. The very first sentence of this chapter contains a most questionable assumption; "this disease," says he, "is most common at the age of puberty; engorgement of the uterus often determines it."

Certainly if there had been one complaint of females which one might have supposed would have escaped the *engorgement-doctrine*, it was the green-sickness of girls, and not of them only, but occasionally of boys also.

Let it not, however, be imagined that M. *Lisfranc* does not recognise the influence of other and of very different causes. This is obvious from what he says on the subject of treatment. When there is decided asthenia and marked impoverishment of the blood, he highly recommends the use of the lactate of iron; a preparation, says he, "which all practitioners now employ with such brilliant success." Bitters and other tonics may be given at the same time. If any gastritic symptoms in this exsanguined state of the system should supervene, what is the physician to do? The following extract (which we purposely give for another reason) contains M. *Lisfranc's* opinion on this question:—

"In these difficult cases, I have seen the physicians of the Hôtel Dieu, who have always known how to keep themselves apart from the often dangerous systems of the Schools, and who have done such excellent service to our profession by inculcating the doctrines of Hippocratic medicine—(who can refrain thinking of *Horace?*

——————video meliora, proboque,
Deteriora sequor,——————)

trust almost entirely to the regulation of the food, allowing a light nourishing diet, of white meats, chicken, fish, and intermitting, for a time, the use of steel, &c. until all traces of the inflammatory symptoms have quite disappeared."

The compliment that is here paid to the medical staff of the Hôtel Dieu is, we have every reason to believe, quite merited: the names of MM. *Recamier* and *Chomel*, not to mention others—does not M. *Andral*, formerly of La Charité, now belong to this hospital?—are a sufficient guarantee for the soundness of the doctrines that are taught and the practice that is inculcated there. We have never heard of these gentlemen adopting any of the extravagant notions, that have been in and out of fashion during the last thirty years among so many of their *confreres*.

It is gratifying to us to find, that the opinion which we have formed of the leading men in Paris from the mere perusal of their writings, is entirely in accordance with that held by some of the most sensible men in the French metropolis.

The chapter on Menstruation need not detain us long; as there is little or nothing novel in it. We shall, however, make one extract, as it suggests an idea which may have escaped the attention of many a practitioner:—

"Profuse menstruation does not weaken a woman in proportion to the quantity of the blood lost; indeed, as a general remark, it seems to be true that women can bear copious hæmorrhages much better than men. They recover their strength and colour much more quickly. A man will remain pale and enfeebled for some months after a great loss of blood; but a woman, under equally favourable circumstances, will be herself again in one-half the time.

"The menstrual evacuation required that Nature should endow the female constitution with more powerful means to repair losses of blood; the hæmorrhages before and after confinement, the drain, so to speak, on the system for the nourishment of the infant, &c. demanded more efficient reparative energies.

"A practical consequence of immense importance may be deduced from these considerations. Our old masters, the physicians of the Hôtel Dieu, often impressed upon us the necessity of placing but little trust on blood-letting in the treatment of women affected with sub-inflammatory affections, in consequence of the rapidity with which losses of blood are repaired, and dwelt forcibly on the superior value of a regulated and spare diet, by which the supply of nutritive matter to the system may be kept in check. This important truth is too often quite overlooked in practice, and, in very many cases, the most judicious medical treatment is virtually rendered null by inattention to the management of the diet."

M. *Lisfranc* is perfectly right; we do not remember to have seen the remark on the difference in the reparative energies of the male and female systems so clearly insisted upon before, and we are glad of the opportunity of bestowing a modicum of commendation. Would that we could continue our praise; for indeed it is much more pleasing to all parties, critic and reader as well as author, to imitate the good example of post-prandial orators in eulogising and returning thanks to each other, than to be ever carping and finding fault. And yet what else can a man, even of the gentlest blood, do in such a case as the present? After having to wade through a hundred pages on the hacknied subjects of leucorrhœa and chlorosis, he finds that his journey is far from being at an end, and

that he must submit to hear over again all the common-place remarks on dysmenorrhœa, and amenorrhœa, and retention of the catamenia, and menorrhagia, &c. &c. As we have already asked before, what have all these diseases to do with a clinical course of surgery? True, there may be a ward for female complaints in the Hôpital de la Pitié, and crowds of women may flock weekly, as we are told they do, to the consultation of M. *Lisfranc*, where, "in the sacred cause of humanity," they are *touched* and *speculated* with the most pains-taking care; but still we contend that, using language in its ordinary acceptation, all this cannot strictly be called surgery; and that it is not "Clinique de l'Hôpital de la Pitié" is proved by the circumstances of most of the cases reported having been derived from the author's private practice, and certainly not from the wards of the hospital whose name is here given.

Even this, and much more, we would have most willingly overlooked, had there been some really valuable matter communicated; but when the burden of the whole is the ever-recurring words, engorgement of the uterus, we verily believe that the patience of the man of Uz himself would have been sorely tried, had he been a medical reviewer. Judge, pensive reader, for thyself: here is an extract from the chapter on menorrhagia :—

"In certain circumstances, especially, we must ascertain by manual examination, and also with the speculum, if the blood comes from the uterus. The *toucher* must also be practised to determine the state of this organ; as idiopathic or essential metrorrhagia is much less common than is generally imagined. I have proved, at the public consultations of our hospital, that, of 50 patients affected with abnormal discharges of blood of a month's continuance, in 46 there is some morbid affection of the womb—either an engorgement or a mole, or hydatids, or a fibrous tumour, or ulcers: in a few cases the ovaries alone are diseased. I have uniformly insisted much at my clinique on this great and important truth. If it be neglected, medicine becomes merely a catalogue of symptoms, and but little success can be expected to attend the labours of the physician. I have elsewhere shown, by numerous facts, that uterine hæmorrhage in many cases cannot be checked until the disease of the uterus, on which it depends, be relieved or cured. Once more, I repeat, *touchez donc dans tous les cas;* I cannot too earnestly insist upon this precept; and do not imitate, I beseech you, the example of, alas! too many physicians, who, for months, nay, for years, will sometimes attend patients, without once thinking of this most potent means of exploration."

When will a phlegmatic Englishman ever show half such *empressement* as this in enlightening his readers? and all to urge them to use the *toucher* and the speculum more frequently than they are in the habit of doing? So indispensable does M. *Lisfranc* consider these means, that, as if to give them precedence over every thing else in the history of uterine complaints, he actually commences his description of "the nervous states of the womb," with these remarkable word: "On touche; on applique le speculum et l'on trouve la matrice à l'etat où nous l' avons vue dans le chapitre precedent!" This (the preceding) chapter, by-the-bye, is headed *Malaises de l'Uterus;* and, as it stands by itself, apart on the one hand from the nervous and on the other from the inflammatory affections of the organ, we are somewhat puzzled what to make of it. This, however, we learn from M. *Lisfranc* that, if we practice the *toucher* in this disease,

the neck of the womb will he found dilated, as it usually is, for a few days before and after the catamenia, and that the application of the specu um will show that the os tincæ is "très-legerement fluxionné."

Even in cases of hysteria, we are recommended by our enthusiastic author to adopt the same methods of examination; as, in not a few instances, the symptoms of this most anomalous complaint are attributable to uterine disease as their cause.

All that we can say on this head is, that we sincerely trust that British medical men will never so far forget the respect that is due to common decency, as to be led to imitate the advice that is so strongly urged in the present work.

If we remember aright, there was a book published in this country, two years or so ago, by a Mr. *Jones* who had been infected with an admiration of French practice, and who very gravely informed us that, with a little delicate management on the part of the physician, there is scarcely any woman in England who will be found to object to the employment of the speculum. He deserves to have his back well flayed with *Christopher North's knout*—does he know what that is?—for saying so. Heaven forbid that, with other fashions from Paris, we should ever import our notions of decorum and morality from that gay and licentious metropolis

A Frenchman's idea of decency is, in many respects, very different from our own; almost the whole of their modern literature—in spite of some glorious exceptions; witness *Chateaubriand*, *Lamartine*, and *Guizot*—is of a loose, or positively filthy stamp; and it is, therefore, perhaps not wonderful that their medical writers have not escaped the prevailing spirit of the times. Certain it is that many of the details in this work of M. *Lisfranc* ought never, in our opinion, to have been made public; at least we know that, if published in this country, under the guise of scientific or professional reports, they would meet with universal reprobation. For example, not only have we an express chapter, of between 20 and 30 pages on the subject of "nimia salacitas" in women, and elaborate instructions how to treat it in patients of all ages, from the young girl to the old worn-out harridan; but in a subsequent chapter we have minute directions how the physician ought to act, about forbidding sexual intercourse between men and their wives. Remember, however, reader, that M. *Lisfranc* on this, as on every other occasion, is "toujours guide par les nobles sentiments de notre belle profession." It may be so; we do not doubt his word; but strange certainly are the lengths to which his fancy carries him.

In his enthusiastic pursuit of engorgement of the uterus, he allows no consideration to put him off the scent, if he once suspects that the crafty foe is burrowing there. The following extract will show our readers what we mean better than any exposition of our own.

"There are women who seem to enjoy capital health, who are fat and fair, and in whom the uterine functions are performed quite normally; yet these unfortunate creatures, living though they are in the most complete security, if interrogated by a sage physician will acknowledge that they sometimes experience a sense of weight and of heat in the pelvis, perhaps that they cannot stand long erect, and that they feel weak in the loins. Most probably if they happen to

speak to a medical man, he tells them that there is little or nothing the matter, and that no serious mischief can exist with such brilliant health as they have, especially as there may be no discharge from the vagina, either white or red-coloured.

"Be on your guard! my friends; you may commit a most dangerous mistake, if you do not make a manual examination, and if you do not apply the speculum; for very probably there exists a disease, which ere long will suddenly break forth with the most alarming symptoms of the most confirmed cancerous diathesis. Such cases are not unfrequent; I meet with two or three every month; the sacred interests of humanity compel me to say that these unfortunate women are the victims of medical ignorance."

Can mere enthusiasm go farther than this? nay, does it not trespass on the limits of insanity? So entirely is our author's whole mind occupied with the subject of engorgement of the uterus, that more than once it has been suspected that he is the victim of a monomaniacal delusion; and now that the *corps de sa maladie*—as his present work may very justly be considered—has been made public, the suspicion in question has certainly derived not a little confirmation. No mind, it has been reasonably imagined, that is perfectly sane could allow one prevailing idea to obtain and keep such a mastery over it, as that of an enlarged womb has acquired over the mental operations of M. *Lisfranc;* but then it has been asked, "If so, what is the particular faculty, and what is the phrenological organ, that is mainly at fault?" Here certainly lies the difficulty in the ultimate diagnosis of the malady—for malady there *must* be, in spite of the brilliant health the patient seems to enjoy. Some have fancied that the organs of *Marvellousness* and *Ideality* may have become congested, or that those of *Caution* and *Causality* have been undergoing a partial atrophy; while others have thought that *Individuality*, and some of the more perceptive faculties, must be chiefly affected. At first we hesitated a good deal between these opinions; but, on a more mature consideration of the history of the case, a new light has flashed across us; we begin to suspect that the *cerebellum* is the offending organ, and that, from some cause or another, this part of the nervous system has become the seat of a "fluxionary congestion" of its vessels. We may term the disease *utero-mania* for two reasons; in the first place, it specifies distinctly the object of the monomaniacal delusion, the real *causa peccati;* and, in the second, it is highly probable that the part chiefly affected is what Holofernes in the play (Love's Labour Lost) has so happily designated as "the womb of the pia mater," and "the ventricle of memory."

Now for the treatment: fortunately this is very obvious. Acting upon the principles which M. *Lisfranc* has so earnestly inculcated in his present work, we have recommended that a *spoliative* bleeding be taken from the arm occasionally,—say once a month during the first quarter,—and afterwards less frequently; that the cupping-glasses, both *scarifiées et seches*, be applied over the nape of the neck in the intervals between the venæsections; that cold lotions be kept constantly on the occiput; that the hydriodate of potash be given internally, and the ointment of ioduret of lead be used externally; and that the patient be kept on a spare diet, avoiding particularly *café au lait*. Along with these medicinal and dietetic regulations, we would suggest, in as delicate a manner as possible, the propriety of his *living quietly* apart, and avoiding whatever may be likely to

excite or exhaust his cerebellum. We observe that he has announced his intention of speedily publishing a third volume of his Clinique Chirurgicale; we strongly dissuade him from doing this for at least a twelvemonth. By that time, the treatment now recommended, if persevered in steadily, will, we are confident, have worked a most salutary change in the state of his malady.

Report from the Poor Law Commissioners on an Inquiry into the Sanitary Condition of the Labouring Population of Great Britain. Pp. 457. London, 1842.

That the greater number of the ailments to which mankind are subject are entailed upon them by their ignorance, carelessness, and apathy, is an observation familiar to every reflecting practitioner of medicine. How large a proportion of the patients whom he daily visits, might, by the simplest hygienic precautions, have altogether avoided the maladies they are suffering under, or have rendered their duration less prolonged, and their character less grave! The public at large fares no better, and Medical Police or Public Hygiene, founded upon the deductions of science and the results of experience, and regulated by an enlightened legislation, exists not among us. And yet how pressing the necessity! It is true the metropolis—thanks to the purifying effects of the great fire—is no longer periodically decimated by the ravages of the Plague; yet is it in many of its localities, as are most of our large towns, and many rural districts, afflicted by epidemic visitations of typhus, small-pox, and malignant scarlet fever, and that sufficiently frequently, one would have thought, to have aroused not merely the exertions of philanthropic humanity to the relief of the attendant sufferings, but also to have alarmed selfish or careless apathy into the endeavour of providing preventives and precautions. When it is recollected the unprepared state the cholera found us in, it might reasonably be expected that a lesson was then read, not to be soon forgotten. More than ten years, however, have elapsed since its invasion of our shores and we much question whether we are now, in any particular, in a better precautionary condition than we then were. It is not until the enemy has entered our camp that we become aroused to the necessity of opposing his progress; and what is done imperfectly, under the influence of a panic, might have been effected far more completely, had but a proper foresight pravailed. Much scrubbing, brushing, cleansing, whitewashing, and consumption of chloride of lime were then directed to the removal of the disgusting effects accumulated by a culpable negligence, but we have yet to learn how far the sources of these have been attacked, and their recurrence rendered impossible. And, yet, if there is one axiom more indisputable than another in medical experience, it is that where filth and dirt prevail, that where the neglected habitations of a crowded, squalid, and wretched population exist, there will be especially found the ravages of epidemic disease to prevail—so that

the direction of its progress over a town or a district may be unerringly predicted by one acquainted with the topography of the misery of the neighbourhood. The experience of our own and other European countries in former times, and of the latest observers in the East, as Clot Bey and Aubert at the present day, prove this of the Plague, while the cholera is a pregnant instance of the same fact: but, while these are startling from the rapidity of the ravages they produce, the more ordinary epidemics are in reality more alarming from their permanence, (often becoming truly endemic) and from the fact of their slower operation challenging in a less marked degree the public attention.

This is, moreover, no barren fact, for the position that these physical conditions do generate or propagate epidemic disease, is scarcely less easy of demonstration than that they are for the most part *removable*. The object of the work now under review, is to point out to the public the extent of the injurious operation of these circumstances, and the most feasible plans for removing them and counteracting their influence on the well-being of society.

The Poor-Law Commissioners having had their attention directed to the great prevalence of fever (1838-9) in some of the thickly-peopled districts of the metropolis, directed Drs. Arnott, Kay, and Southwood Smith to examine into the subject, and to furnish reports how far certain physical causes of such prevalence, susceptible of removal, existed. The valuable documents so produced gave rise to an order of the House of Lords, that similar inquiries should be instituted throughout England by the Commissioners. Circulars, containing the necessary queries were accordingly addressed by them to all the medical officers, Board of Guardians, and Assistant Commissioners of the various Unions, and in due time these produced a mass of very important, and frequently very able reports. The Marquis of Normanby subsequently desired that the investigation should also be extended to Scotland, and although the same mechanism for obtaining information did not there exist, the Commissioners received cheerful aid in their important labours from the medical profession and magistrates of the various localities. Having received the various replies, which altogether would form a most ponderous tome, and which, if indiscriminately published, would have shared the fate of various other unreadable "blue books," the Commissioners, in the practical spirit which originated the inquiry, directed their secretary, Mr Chadwick, to prepare a digest or summary of their contents, and of the conclusions fairly deducible from these. Most ably has this talented and indefatigable officer performed his laborious task, and the result is the production of a book abounding in valuable practical information, and startling evidence of the reality of the evils, deplored, unencumbered by unnecessary details, of a convenient size, and eminently suggestive of future improvements. It is a work which ought to produce, and which has produced, a deep impression upon society, and, secure of an abundant circulation, it must prove of great utility, if anything can, in awakening the public from its lethargic condition, and in arousing it to the necessity of no longer deferring active interference.

We rejoice that the subjects of contention between the Poor-Law authorities and the medical profession are upon the eve of adjustment, and we cannot but think that the Commissioners have manifested not

ıly much injustice, but also a great want of tact in the manner in which ıey have treated us. They had enough of interested prejudices, absurd ısrepresentations, and the essential obstacles to all organic changes, to ıntend against, without arousing, by their dictatorial tone, their degrading ·opositions, and impossible requirements, the insulted feeling of a whole ·ofession, which least of any can have the reproach of selfishness cast ɔon it, and which, by its enlightenment, and great influence with poor ıd rich, might have been powerfully coadjutory in working out the great ıcial revolution the poor-law professes to achieve, or at all events assist ı obtaining for it that fair-play which every great and well-intended ɔeriment is entitled to demand. Acting harmoniously with the central ıthorities, what an admirable mechanism the medical officers of the poor-ıw unions present for ascertaining the defective condition of the public ealth and its causes, and for suggesting and carrying out the application f its remedies. The production of the present Report, compiled, as it is, hiefly from the gratuitous (to the injustice of this we shall again refer) eports of these officers, is a sufficient testimony of the value of such ervices.

To proceed to the work. We will pass its various chapters in brief eview, dwelling on but few portions, as, although all that the book con-ains requires to be brought before the general reader, the greater portion ı well known to, and would be superfluous for the professional one. We annot do better than commence by extracting Mr. Chadwick's statement f the extent of the evil.

"A conception may be formed of the aggregate effects of the several causes of ortality from the fact, that of the deaths caused during one year in England ıd Wales by epidemic, endemic, and contagious diseases, including fever, typhus, ıd scarlatina, amounting to 56,461, the great proportion of which are proved to e preventible, it may be said that the effect is as if the whole county of West-oreland, now containing 56,469 souls, or the whole county of Huntingdonshire, r any other equivalent district, were entirely depopulated annually, and were ıly occupied by the growth of a new and feeble population living under the ears of a similar visitation. The annual slaughter in England and Wales from reventible causes of typhus which attacks persons in the vigour of life, appears o be double the amount of what was suffered by the allied armies in the battle f Waterloo. It will be shown that diseases such as those which now prevail on ınd, did, within the experience of persons still living, formerly prevail to a greater xtent at sea, and have since been prevented by sanitary regulations; and that hen they did so prevail in ships of war, the deaths from them were more than ouble in amount of the deaths in battle. But the number of persons who die is to be taken also as the indication of the much greater number of persons who fall sick, and who, although they escape, are subjected to the suffering and loss ccasioned by attacks of disease. Thus it was found, on the original inquiry in he metropolis, that the deaths from fever amounted to 1 in 10 of the number ttacked. If this proportion held equally throughout the country, then a quarter f a million of persons will have been subjected to loss and suffering from an ttack of fever during the year; and in so far as the proportion of attacks to deaths is diminished, so it appears from the reports is the intensity and suffering from the disease generally increased. It appears that the extremes of mortality at the Small-Pox Hospital, in London, amongst those attacked, have been 15 per ent. and 42 per cent. But if, according to other statements, the average mor-tality be taken at 1 in 5, or 20 per cent., the number of persons attacked in England and Wales during the year of the return, must amount to 16,000 per-

sons killed, and more than 80,000 persons subjected to the sufferings of disease, including, in the case of the labouring classes, the loss of labour and long-continued debility; and, in respect to all classes, often permanent disfigurement, and occasionally the loss of sight." 4.

I. GENERAL CONDITION OF THE RESIDENCES OF THE LABOURING CLASSES, WHERE DISEASE IS FOUND TO BE THE MOST PREVALENT.

The unvarying evidence of all the reports proves these to be in the most wretched condition, as regards cleanliness, ventilation, drainage, and all the circumstances necessary for even the production of the lowest degree of comfort. In numerous cases they are totally unfit for human beings to exist in. The evil is of no local or district character, but prevails wherever the poor are congregated together. So far from being peculiar to the metropolis and other large towns, it is found as prevalent at Windsor in the vicinity of the abode of royalty, as elsewhere. There typhus reigns triumphant amidst stinking ditches, undrained and overcrowded abodes, and a defective supply of water. Many apparently advantageous sites are nowise exempt. Thus Mr. Little, the surgeon of the Chippenham Union, speaking of the parish of Colerne, says:—

"From its commanding position (being situated upon a high hill) it has an appearance of health and cheerfulness which delight the eye of the traveller, who commands a view of it from the Great Western Road, but this impression is immediately removed on entering at any point of the town. The filth, the dilapidated buildings, the squalid appearance of the majority of the lower orders, have a sickening effect upon the stranger who first visits the place. During three years attendance on the poor of this district, I have never known the small-pox, scarlatina, or the typhus fever to be absent. The situation is damp and the buildings unhealthy, and the inhabitants themselves inclined to be of dirty habits. There is also a great want of drainage." 11.

Birmingham, on the contrary, where many occupations reputed unhealthy are carried on, by reason of its excellent drainage and careful building, enjoys, according to the report of Mr. Hodgson, and the physicians of the place, a remarkable immunity from fever. To Glasgow, which Mr. Chadwick visited in company with Drs. Alison, Arnott, and Cowan, seems to be extended the palm of pre-eminent filthiness, while the prevalence of typhus in that city is well known to our readers. Describing some of the wretched localities they inspected, Dr. Arnott expresses himself as follows:—

"There were no privies or drains there, and the dung-heaps received all the filth which the swarm of wretched inhabitants could give; and we learned that a considerable part of the rent of the houses was paid by the produce of the dung-heaps. Thus, worse off than wild animals, many of which withdraw to a distance and conceal their ordure, the dwellers in these courts had converted their shame into a kind of money by which their lodging was to be paid. The interiors of these houses and their inmates corresponded with their exteriors. We saw half-dressed wretches crowded together to be warmed; and in one bed, although in the middle of the day, several women were imprisoned under a blanket, because as many others who had on their backs all the articles of dress that belonged to the party were then out of doors in the streets." 24.

In connection with this division of the subject, although the section concerning them is placed by Mr. Chadwick at the end of his work, we may briefly advert to the state of the common *lodging-houses* of the lowest classes.

"From almost every town, from whence sanitary reports have been received, that have been the results of careful examinations, the common lodging-houses are pointed out as *foci* of contagious disease within the district. These houses are stages for the various orders of tramps and mendicants who traverse the country from one end to the other, and spread physical pestilence, as well as moral depravation. The evidence everywhere received distinguishes them prominently as the subjects of immediate and decidedly strong legislative interference for the public protection." 357.

And really the horrors of these places are indescribable and their continuance disgraceful to a civilised community. In 47 of these in Birmingham, the sexes slept indiscriminately together. In one examined at Brighton, in the largest sleeping-room, 16 feet by 10, and seven high, six beds accommodated twelve persons besides children.

"It is the invariable practice," says Dr. Baron Howard, of Manchester, "for these keepers of 'fever beds,' as the proprietors were termed by Dr. Ferrier, to cram as many beds into each room as it can possibly be made to hold. The scene which these places present at night, is one of the most lamentable description: the crowded state of the beds, filled promiscuously with men, women, and children: the floor covered with the filthy and ragged clothes, they have just put off, and with their various bundles and packages, containing all the property they possess, mark the depraved and blunted state of their feelings, and the moral and social disorder which exists. The suffocating stench and heat of the atmosphere are almost intolerable to a person coming from the open air, and plainly indicate its insalubrity." "I have seen seven persons," says Mr. Rayner, of Stockport, "in the same bed, and last week removed to the infirmary a case of rheumatic fever, with translation of disease to the heart, from a bed which every night contains eight persons." "I have known," says Mr. Oliver, of Durham, "forty persons, half-clothed, lodged in one of these wretched dwellings, three or four lying in one bed upon straw, and only a single counterpane, which is never changed, to cover them."

A regular system of inspection and licensing of these places has been put in force in Glasgow recently with the best effect. "It were only a statement," says Mr. Chadwick, "of the concurrent opinions of the commissioners of police, of magistrates, of medical officers, and of the guardians charged with the administration of the poors' rates, to represent the urgent necessity of legislative provisions for the general adoption of similar measures throughout the country."

II. PUBLIC ARRANGEMENTS EXTERNAL TO THE RESIDENCES BY WHICH THE SANITARY CONDITION OF THE LABOURING POPULATION IS AFFECTED.

Drainage and Sewerage.—Unless means be secured for the removal of superfluous moisture and the refuse and filth of society it is evidently quite impossible that its healthy condition can be maintained; and yet

the work now before us amply demonstrates how ineffectually this has been performed in almost every part of the country. Never were cause and effect more clearly demonstrated, for while the progress of fever in a row of houses or street has frequently been limited to those habitations, which were destitute of sewerage, and arrested at those better provided for in this respect; so, on the other hand, localities in which it had become quite endemic, have been restored to a sanitary condition when an efficient drainage, &c. has been instituted. Perhaps no town in the kingdom is effectually drained throughout, and where it is so at all, it is frequently indebted to some accident of site. The largest towns suffer most, from having such numerous crowded localities. In Liverpool, (*e. g.*) the houses of the majority of the working classes are without any sewers whatever, and from 35,000 to 40,000 of its inhabitants exist in 8,000 cellars. Out of 6,571 of these the surveyors reported 2,988 to be wet or damp, and nearly one-third of the whole are situated from five to six feet below the level of the street. Country districts, however, are by no means exempt from the same defects and their consequences, both of which have been repeatedly observed in detached residences and groups of houses.

One would have thought that where so vast an area, and so complicated a surface as the Metropolis had to be drained, and that the sewers of its now almost innumerable and continually increasing streets required to be brought into connection with the main ducts, that the first engineering skill which could be procured would be put into requisition for their contrivance and construction, that all the resources of science would be freely employed, and that the governance of the whole would be conducted upon general and comprehensive principles by some competent and responsible authority.

No such thing. A large portion of the capital is quite unprovided with sewers or drains of any description, the remainder is divided among a number of irresponsible and despotic bodies, termed Commissioners of Sewers, who, with a jobbing and disgracefully extravagant expenditure, employ unskilled agents, (with one exception, the Holborn and Finsbury Division,) whose proceedings, they, themselves being profoundly ignorant of all such matters, can neither direct nor control, and the consequence is, that the operations of one commission frequently interferes with that of another, the sewers are so badly constructed as to become receptacles of filth, instead of channels for its removal, obstacles are thrown in the way of the communication of each house with the sewer; and thus, after being heavily taxed, to provide these persons with lucrative places, it frequently happens that in Winter and rainy weather whole districts are overflown by the obstruction of the sewers, while, in the hot days of Summer, the stench from these receptacles is insufferable.

"The sewerage of the Metropolis," says the author, "though it is a frequent boast to those who have not examined its operations and defects, will be found to be a vast monument of defective administration, of lavish expenditure, and extremely defective execution. In the course of the present inquiry instances have been frequently presented of fevers and deaths occasioned by the escape of gas from the sewers into the streets and houses. In the evidence given before the Committee of the House of Commons, 1834, one medical witness stated that

of all cases of severe typhus that he had seen, eight-tenths were either in houses of which the drains from the sewers were untrapped, or which, being trapped, were situated opposite gully-holes: and he mentioned instances where servants sleeping in the lower rooms of houses were invariably attacked with fever." 55.

One of the difficulties in the due purification of a large capital, must always be the removal and disposal of the human excrement and other house filth. A small proportion only of the houses in London possess water-closets, and accumulations occur, therefore, in the privies and cesspools. The expense and disgusting annoyance of having these emptied cause them to become overcharged with their contents; and abundant evidence is given in this book of the horrible filthy state which frequently results. The soil often choaking up all issues, and exuding into neighbouring premises, is in the lowest tenements found dropping about and infecting the atmosphere on every side. Mr. Chadwick believes the grand agent for the removal of all impurities from the roads and houses should be abundant supplies of water, allowed to flow with some degree of impulse, and no one can doubt the preferability of washing, in this manner, such impurities away under-ground, to conveying them by hand-labour, and exposing a whole locality to all the horrors of these night operations. But there is some difficulty in ultimately disposing of them, for if washed into the Thames, of course they become additional sources of pollution to that already dirty river. But we think its water is already and unavoidably unfitted for human consumption, unless it be previously purified, or the quantity required drawn from a point sufficiently removed from the seats of impurity, and, therefore, that there can exist no valid objection to conveying into its bosom the immense accumulations resulting from the refuse of a population of near two millions: and, indeed, we ought to feel rejoiced at having so magnificent a main sewer at hand for the purpose. Mr. Chadwick, however, objects to this proceeding, on the ground that so much good stuff should not be wasted; and he suggests that it should be conveyed by pipes to reservoirs, for the purpose of employing it as manure in some of the barren rural districts; furnishing, as it does, when diluted with water, an excellent material for irrigation, as is found by experience, in the vicinity of Edinburgh—and, we believe we may add, in the Celestial Empire. He says—

"The condition of large rural districts in the immediate vicinity of the towns, and of the poorest districts of the towns themselves, presents a singular contrast in the nature of the agencies by which the health of the inhabitants is impaired. Within the towns we find the houses and streets filthy, the air fetid, disease, typhus, and other epidemics rife among the population, bringing, in their train destitution, and the need of pecuniary as well as medical relief; all mainly arising from the presence of the richest materials of production, the complete absence of which would, in a great measure, restore health, avert the recurrence of disease, and, if properly applied, would promote abundance, cheapen food, and increase the demand for beneficial labour Outside the afflicted districts, and at a short distance from them, as in the adjacent rural districts, we find the aspect of the country poor, and thinly clad with vegetation, except rushes and plants favoured by a superabundance of moisture, the crops meagre, the labouring agricultural population few, and afflicted with rheumatism and other maladies, arising from damp and an excess of water, which, if removed, would relieve them from a

cause of disease, the land from an impediment to production, and, if conveyed for the use of the town population, would give that population the element of which they stand in peculiar need, as a means to relieve them from that which is their own cause of depression, and return it for use on the land as a means of the highest fertility." 97.

Supply of Water.—It is impossible that cleanliness and health can be secured unless this is abundant, for when it is scanty, dirty habits become necessarily engendered, and not a few maladies originate in personal dirtiness. There is, perhaps, hardly a town in the kingdom but has reason to complain on this score. "No previous investigations," says Mr. Chadwick, "had led me to conceive the great extent to which the labouring classes are subjected to privations, not only of water for the purpose of ablution, house cleaning, and sewerage, but of wholesome water for drinking, and culinary purposes."

The mere circumstance of water existing in a well or a river, even in the nearest vicinity, is not sufficient. To be effectually useful it must be brought into the house in pipes; and, certainly, this is even now done at a very cheap rate in London, for Mr. Chadwick calculates 136 pail-fuls of water may be obtained for five farthings, and the same quantity of water is delivered by the London Companies for sixpence as by the Paris water carriers for nine shillings. Cheap as this is, it is yet beyond the means of many of the lowest classes, and means of effecting the supply more economically and more universally, as a matter of public health, rather than of commercial profit, have yet to be discovered. Private companies cannot afford this at a lower rate than they do, and they will not extend and force their commodity into localities which are not likely to prove remunerative. We are accustomed to prefer the competition of private companies in our country to the operations of government in continental states, and generally with reason, but it will often be found that the wealthy and middle classes are far more benefited by this state of things than those of the lower orders, who can offer no remunerative return.

III. CIRCUMSTANCES IN THE INTERNAL ECONOMY AND BAD VENTILATION OF PLACES OF WORK: WORKMEN'S LODGING HOUSES, DWELLINGS, AND THE DOMESTIC HABITS AFFECTING THE HEALTH OF THE LABOURING CLASSES.

Overcrowding and Defective Ventilation.—As a strong example of the ill effects of these, Mr. Chadwick brings forward the case of the metropolitan tailors, his attention having been especially directed to them by reason of the great preponderance of early deaths, and cases of widowhood and orphanage. The inquiry he instituted was indeed called for. Some of the great London tailors employ from 80 to 250 men, who are congregated together in crowded apartments, so that each man is almost in contact with his neighbour. What with the odour of the profuse perspiration which is always present, and the more perceptible from the half undressed state in which these men work, the great heat of the room, and the utter absence of ventilation, such an atmosphere is produced that new

omers frequently faint away, while the old hands are in the habit of stimu-ating their exhausted strength by repeated libations of gin and beer during ie day, which are regularly brought to them, engendering thereby all the orrors of intemperance. In such a state is the surface of the bodies of iese poor men that the employers sometimes have £40. or £50. worth of ght goods spoiled in a season by the perspiration alone. The witnesses onsidered that two out of twelve hour's work were lost by bad work from ervous exhaustion, which in a well-ventilated shop need not be present. A man, coming into one of these shops at 20 is a worse man at 40 than e would be if working at a country tailor's at 50, and indeed not above 0 in 100 are to be found in the London shops above 50. All this results rom the ignorance, and not from the want of generosity on the part of he employers, who have contributed munificently, for decayed tailors, ums, indeed, far less than which, if expended in sanitary contrivances, would have prevented the premature arrival of a diseased old age, and would have enabled the tailor to have provided means for his own subsist-nce against the advent of the natural period of his decay.

By examination of the registries it is found that at 53 per cent. of these operatives die of disease of the respiratory organs in the metropolis, and but 39 per cent. in the country, 5 per cent. of typhus in London, and 1 per cent. in the country, and that while in town only 12 in 100 (and these including master-tailors) attain old age, in the country 25 in the 100 do so. Another class, much oppressed by these causes of diseases, in the metropolis, is that of the milliners and dress-makers, and the more so as much of their work, in large shops, is performed at night, when the air is additionally deteriorated by the gas or candles.

Medical readers require no arguments to prove the baneful and destructive effects of over-crowding and ill-ventilation. The experience of the whole profession as ascertained through the medium of the army, of hospitals, foundling-hospitals, and even of private practice, is unanimous on this point. The second Report of the Poor-Law Commissioners contained a recent case. A large pauper school attracted great attention by reason of the great mortality prevailing in it, and which was at once attributed to defective nourishment. On a searching inquiry, however, being instituted, the diet was found to be unusually good, but due ventilation wholly unprovided for. This was remedied and "in the same space where 700 children were by illness awakening extensive sympathy, 1100 now enjoy excellent health."

One effect of diffusing information upon this subject will be to disabuse the public mind as to the insalubrious effects of certain occupations *per se*, proving such effects usually to result from the prejudicial but non-essential circumstances under which they are usually carried on. The inspectors are enabled to distinguish the workers in cotton factories in country districts at once from those employed in towns. Du Chatlet exposes the error of the general opinion as to the injurious nature of the tobacco manufacture, and Mr. Chadwick confirms the truth of his remarks.

"If I might add my testimony on this point, derived from my own observations on two of the commissions of inquiry, on which I have had the honour to serve, it would be entirely in corroboration of the above statement. On comparing the actual condition of workmen with the medical description of these

diseases, and the causes, we commonly found that the results of a cluster of causes are commonly ascribed to one; and in respect to several classes of workmen the real cause, the invariable antecedent, such as defective ventilation, is unnoticed. No persons were frequently more surprised than the intelligent workmen, by the frequent exaggerated accounts of the operations of particular causes upon them, and the erroneous association of effects to causes with which they were known to have no real connection." 116.

As our business is rather with the health than with the morals of the community, we may pass over Mr. Chadwick's illustrations of the moral degradation which results from the crowded condition of the habitations of the poor in town and in country—whole families cooped up in one miserable room, and herding together, heedless of *sex or age*, like so many swine, and exposed to the most revolting violations of all decency and decorum. The vitiated air of such abodes, by its depressing effect upon the nervous system becomes powerfully inductive of the habits of dram-drinking, which are so freely indulged in by both sexes. The mere wretchedness of an abode, even independently of its overcrowded state, has the tendency to reduce its inhabitants to the same level, and instances are here given of persons of exemplary conduct completely degenerating, after being placed in abodes which it was physically impossible to keep clean and comfortable, and of others who, removed from the degrading hovels in which they had vegetated, to habitations fit for human beings, underwent a complete revolution in manners and habits. And it is in this direction that the helping hand to the poor man should be first directed, for even when possessed of the pecuniary means of extricating himself, unable to appreciate comfort he has never enjoyed, he prefers doggedly to continue in his abasement to expending a trifle for his own emancipation. Thus, it is by no means an indication of a man's being in the receipt of low wages that his abode is wretched, for some of the worst provided for families, cited in this work, were well paid, while some of those possessing the neatest abodes were in the receipt of sums apparently utterly insufficient. No marked improvement of the condition of the poorer classes ever resulted from their own unaided exertions, for a certain extent of education and refinement is necessary to appreciate the importance of making some sacrifice for the obtaining this description of amendment; and, charity bestowed upon them, while they continue in their semi-brutalized condition, is frequently converted into the means of its perpetuation. The following passage is important.

"The more closely the investigation as to the causes of epidemic disease is carried the more have the grounds been narrowed on which any presumption can be raised that it is generally caused by extreme indigence, or that it could be made generally to disappear simply by grants of money. In the great mass of cases in every part of the country, in the rural districts, and in the places of commercial pressure, the attacks of disease are upon those in full employment, the attack of fever precedes the destitution, not the destitution the disease. There is strong evidence of the existence of a large class of persons in severe penury in some places, as in Glasgow, being subject to fever, but the fever patients did not, as a class, present evidence of being in destitution in any of the places we examined." 144.

The evidence of Mr. Byles, (as also of the majority of the reporters) medical officer of Whitechapel Union, concerning the Spitafields district,

corroborative of the above. He found fever chiefly prevalent among those shut up in full employment, and not among those destitute, and roaming about in quest of it. As observed above, Mr. Chadwick, looking upon fever not usually as a consequence of destitution, but as leading to it, believes that the prevalence of a contrary opinion has prevented vigourous means being put into operation for the removal of those causes of the disease which are susceptible of remedies.

IV. Comparative Chances of Life in different Classes of the Community.

"Very dangerous errors arise from statistical returns and and insurance tables of the mean chances of life made up from gross returns of the mortality prevalent amongst large classes, who differ widely in their circumstances. Thus we find, in inquiry into the sanitary condition of the population of different districts, that the average chances of life of the people of one class in one street will be 15 years, and of another class in a street immediately adjacent, 60 years. In one district of the same town I find, on the examination of the registries, the mortality only 1 out of every 57 of the population; and in another district one out of every 28 dies annually. A return of the average or the mean of the chances of life, or the proportions of death in either instance, would and does lead to very dangerous errors, and amongst others to serious misapprehensions as to the condition of the inferior districts, and to false inferences as to the proper rates of insurance." 153.

In order to draw more accurate deductions than could be obtained under ordinary circumstances, Mr. Chadwick obtained returns from several superintendent registrars of the average mortality as it occurs in three different classes of society, and we regret that we cannot extract the whole of these. The three classes consisted of 1st, gentlemen, professional persons and their families; 2d, tradesmen (farmers in rural districts) and families; 3d, mechanics, servants, labourers and families. The average age of the deceased in each of these was, in the Bolton Union, 34; 23; 18: Bethnal Green, 45; 26; 16: Leeds, 44; 27; 19: Liverpool, 35; 22; 15: Whitechapel, 45; 27; 22: Strand, 43; 23; 24. Of all districts examined, the country of Rutland (the moral and intellectual condition of whose inhabitants is also favourably noticed) stands highest, 52; 41; 38. While Manchester is thus represented, 38; 20; 17. The agricultural population of Wilts is also as follows, 50; 48; 33; and in the Kendal Union, where the population is partly agricultural, partly manufacturing, the numbers are 45; 39; 34.

The difference in the proportion of deaths among all classes between one district and another shows the influence of locality markedly. Mr. Finlaison has drawn up a table to exhibit this in the respective metropolitan districts—although the extremes are more remarkable when smaller localities are contrasted.

Out of 10,000 inhabitants there were of deaths—
224 in the Western—231 in the Northern.
255 in the Central—260 in the Eastern.
259 in the Southern—247 for the whole metropolis.

The researches of M. Villermé are also quoted, who, assuming the

exemption from taxation as a test of poverty, found the mortality in the various arrondissemens of Paris to be high or low according as these contained many or few exempted houses. The cholera followed the same track. Similar results attended the comparison of the mortality found in different streets accordingly as they were inhabited by different classes, and from comparing it among persons possessing similar incomes, but residing in favourable or unfavourable localities.

"If we could ascertain the rates of mortality formerly prevalent in the separate districts of each large town, it is probable that we should find that the improvement in the average chances of life of the whole town has been raised principally by the improved chances in the districts where the streets have been widened, paved, and cleansed, and the houses enlarged and drained: and that the amount of sickness and chances of life in the inferior districts are as little altered as their general physical condition. The present condition of those parts of London where the average mortality is 1 in 28 annually, appears to be not dissimilar to the general condition of the whole metropolis about a century ago, which was said to be 1 in 20, a rate still to be found in some of the most neglected streets." 172.

In Paris the same proportionate decrease in the ratio of mortality and improvement of structural arrangements is observable. M. Villermé's tables show the mortality to be 1 in 52 in one district, and 1 in 26 in another. The ratio varies in London from 1 in 28 to 1 in 57, and in the Township of Manchester (with a population of near 80,000) one twenty-eighth part of the inhabitants are annually swept away, while in a favoured suburban district only a sixty-third part perish.

Nor have we the consolation of knowing that this mortality is attended by a thinning of an excessive population, and a greater degree of prosperity for the survivors.

"If in the most crowded districts, the inference is found to be erroneous, that the extent of sickness and mortality is indicative of the pressure of population on the means of subsistence, so is the inference that the ravages act to the extent supposed, as a positive check to the increase of the numbers of the population. In such districts the fact is observable, that where the mortality is the highest, the number of births are more than sufficient to replace the deaths, however numerous they may be. * * * * We have seen that in the lowest districts of Manchester of 1000 children born, more than 570 will have died before they attain the fifth year of their age. In the lowest districts of Leeds the infant mortality is similar. This proportion of mortality M. Mallet designates as the case of a population but little advanced in civilization, revaged by epidemics—a population in which the 'influences on the lower ages are murderous, but where the great mortality in infancy is compensated by a high degree of fecundity. It is the case of the population in many large towns, especially in past ages.' But whilst in Manchester, where $\frac{1}{28}$ of the whole population is annually swept away, the births registered amount to 1 in 26 of the population: in the county of Rutland, where the proportion of deaths is 1 in 52 of the population, the proportion of births, is only 1 to 33." 177-9.

The increase of births after a pestilence, has long been observed, and M. Quetelet's researches in various countries confirm the fact of an increase of births coinciding with the high mortality of the worst districts. Mr. Chadwick has made further interesting observations upon the subject.

"By means of the last census, and the last year's completed registration of

deaths and births in England, I am enabled to show that there has been an increase of the population from births alone in those parts of the country where the proportionate mortality is greatest. * * *

* * * We here find* that in the fourteen counties where proportionate mortality has been the *least*, the 184 deaths in 10,000 persons are made up by 97 births; hence 113, or more than one per cent., is added by new births to the existing population. In the 14 *intermediate* counties where the deaths on every 10,000 persons increase to 208, there the deaths are again made up 302 births, and 94, or close upon one per cent., are again added to the population.—In the fourteen counties where the increase of the mortality is *greatest*, the deaths in each 10,000 are increased to 259; but here, also, we find that the births are again sufficient to make up for the deaths; they are 348, and increase the population by 89, or less than one per cent. Hence, if the number of births in each 10,000 persons of the fourteen counties where the mortality has been the greatest, had taken place among every 10,000 persons of the counties where the mortality has been the least, then the increase of population in these latter by births, instead of being 113, would have been 164.

"I must again observe, that the registration of births in the most populous town districts, where the mortality is greatest, is the least perfect. The excess of birth over deaths may really be taken to be greater than shown in the returns from the districts where the mortality is greatest." 183.

Mr. Chadwick warns us not to estimate the strength of a people by its mere numerical condition.

"Simple enumerations of the numbers of a population are of themselves but imperfect means for judging of its progression in strength. That is best shown in the increased proportions of the adults, who are of the age and strength and skill for productive industry, in the extended period during which each adult labourer occupies his post.

"M. Mallet bears testimony that the experience of Geneva is confirmatory of the important rule, that the strength of a people does not depend on the absolute number of its population, but on the relative number of those who are of the age and strength for labour. It is proved that the real and productive value of the population has there increased in a much greater ratio than the increase in its absolute numbers. The absolute number has only doubled, in the instance of Geneva, during three centuries; but the value of the population has more than doubled upon the purely numerical increase of the population. In other words, a population of 27,000 in which the probability of life is 40 years for each individual, is more than twice as strong, for the purposes of production, as a population of 27,000 in which the probability or value of life is only twenty years for each individual.

"The important general fact of the proportion of adult physical strength to the increased duration of life, or improved sanitary condition of the individuals, is verified by the examinations of the individuals of different classes. M. Villermé states, that the difference of strength between classes such as those in which we have seen that the value of life differs, is well known to the officers engaged in recruiting for the army, but no one had collected the facts to determine the precise difference. The time allowed to M. V. only enabled him to do so at Amiens. The result was, that the men of from 20 to 21 years of age were found the more frequently unfit for the trade of arms, from their stature, constitution, and health, as they belonged to the poorer classes of manufacturing labourers. In order to obtain 100 men fit for service, it was necessary to have

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* We omit the tables, and give only the results.

as many as 343 of the poorer classes; whilst 193 conscripts sufficed of the classes in better circumstances. Analogous facts were observed in the greater part of the towns in France in which he conducted his official investigations.

"In the evidence of recruiting officers, collected under the Factory Commission of Inquiry, it was shown that fewer recruits of the proper strength and stature for military service are obtainable now than heretofore from Manchester. I have been informed that of those labourers now employed in the most important manufactories, whether natives or migrants to that town, the sons who are employed at the same work are generally inferior in stature to their parents.—Sir James M'Grigor stated to me the fact that 'A corps levied from the agricultural districts in Wales, or the northern counties of England, will last longer than one recruited from the manufacturing towns of Birmingham and Manchester, or from near the Metropolis.' Indeed, so great and permanent is the deterioration, that out of 613 men enlisted, almost all of whom came from Birmingham, and five other neighbouring towns, only 238 were approved for service. The chances of life of the labouring classes of Spitalfields are amongst the lowest that I have met with, and there it is observed of the weavers, though not originally a large race, that they have become still more diminutive under the noxious influences to which they are subject.

* * * * * * *

"This depressing effect of adverse sanitary circumstances on the labouring strength of the population, and on its duration, is to be viewed with the greatest concern, as it is a depressing effect on that which most distinguishes the British people, and which it were a truism to say constitutes the chief strength of the nation—the bodily strength of the individuals of the labouring class. The greater portion of the wealth of the nation is derived from the labour obtained by the application of this strength, and it is only those who have had the means, practically of comparing it with that of the population of other countries, who are aware how far the labouring population of this country is naturally distinguished above others. There is much practical evidence to show that this is not a mere illusion of national vanity, and in proof of this, I might adduce the testimony of some of the most eminent of the employers of large numbers of labourers, whose conclusions are founded on experience in directing the work of labourers from the chief countries of Europe." 186.

V. PECUNIARY BURDENS CREATED BY THE NEGLECT OF SANITARY MEASURES.

We regret that we cannot follow Mr. Chadwick into his statistical exposition of the increased charges upon society, in the way of the rapid multiplication of widowhood and orphanage, incidental to the premature death of working men.*

When masses of persons are exposed to noxious influences, there is found to result a young and feeble, in the place of a mature and robust population. According to the statment of Mr. Lanyon, at the Poly-

* "That of the 43,400 cases of widowhood, and 112,000 cases of destitute orphanage relieved from the poors' rates in England and Wales alone, it appears that the greatest proportion of death of the heads of families occurred from the above specified and other removable causes; that their ages were under 45 years; that is to say, 13 years below the natural probabilities of life as shown by the experience of the whole population of Sweden." Recapitulation, 369.

technic Society of Cornwall, "on an examination of 2,145 men, engaged in mining, it was found that their average age was 30 years; and that the average period they had been engaged in work was 15 years. On examining the condition of 1,033 artisans, and agricultural labourers, living and working in the vicinity, it was found that their average age was 40 years, and that their average period of work, then completed, was 25 years. Of the mining population one-third only had reached 50 years of age, whilst of the non-mining population, one-third had attained 70 years of age."

Dr. Alison found that the average of the colliers of Tranent was 34, of the surrounding agricultural population 51. When the population of the lower orders of Manchester or the Metropolis are brought together in great numbers, (as in the Chartist mobs,) the preponderating numbers of youthful persons (ranging from 16 to 25,) is remarkable, and the absence of a proportion of those of middle-age still more so. These masses of juveniles form the active force in the disturbances, (as in the Bristol riots,) and strikes, bearing down by their preponderating numbers the opposition of the small minority of mature and reflecting operatives.

"The experience of the metropolitan police is also similar as to the comparatively small proportion of force available for public service from such depressed districts. It is corroborative also of the evidence as to the physical deterioration of their population, as well as the disproportion in respect to age. Two out of every three of the candidates for admission to the police force itself, are found defective in the physical qualifications. It is rare that any one of the candidates from Spitalfields Whitechapel, or the districts where the mean duration of life is low, is found to present the requisite physical qualifications for the force, which is chiefly recruited from the open districts at the outskirts of the town, or from Norfolk and Suffolk, and other agricultural counties.

"In general the juvenile delinquents, who come from the inferior districts of the towns, are conspicuously under size. In a recent examination of juvenile delinquents at Parkhurst, by Mr. Kay Shuttleworth, the great majority were found to be deficient in physical organization. An impression is often prevalent that the criminal population consists of persons of the greatest physical strength. Instances of criminals of great strength do certainly occur; but, speaking from observation of the adult prisoners from the towns, and the convicts in the hulks, they are generally below the average standard of height." 202.

We can only extract a portion of the author's illustration of the effects of premature deaths on the number of the children, and in depressing the survivors.

"In works where the average period of working ability is extended to the natural period of superannuation, which the evidence shows that a combination of internal and external sanitary measures may be expected to give, viz. an average of full sixty years, the account for one place would be one superannuated workman and one widow, and a family of four or five well-grown children, who having received parental care during that period, will probably all have obtained, before its termination, the means of independent existence. Whereas, with a population of only fifteen or twenty years of working ability, the same place of work may, during the same period, have been filled by two generations, and one-fourth of work-people, not one of which has brought all the children dependent upon it to maturity or a condition of self-support; and the

account of widowhood and orphanage will frequently, for the same place of work, stand thus:—

Workmen prematurely dead.		Orphan Children.	Years loss of Support.
J. M	1 widow	2	39
S H.	1 widow	7	26
H. Y.	1 widow	5	15

"That is to say: three widows instead of one, and three sets of stunted and unhealthy children, dependent, for such various periods, as those above specified, and competing for employment at the same place; instead of one set of healthy children, arrived at the age of working ability for self-support. The occupation of the places of work by a comparatively young and procreative population, brought forward by the premature removal of the middle-aged and the aged workers, by the various causes of premature deaths, will, I apprehend, sufficiently clearly account for the generally increased proportion of births in those districts where the rate of mortality is high; and it will scarcely be necessary to give further illustrations of the dreadful fallacy which tends to an acquiescence in the continuance of the causes of pestilence and premature mortality as corrections of the pressure of population." 205.

The mere pecuniary cost of disease is thus stated by the late Dr. Cowan.

"If any arguments were wanting to arouse the community to the investigation of this important subject, they might be drawn from the heavy pecuniary tax which fever entails on the benevolent of our city, from the poverty, crime, and misery which this disease engenders. It is not possible, from the data before me, to give anything like an accurate calculation of the sums spent in Glasgow for the treatment of fever during the last twenty years.

"The following calculation intentionally falls considerably under the amount to prevent every suspicion of exaggeration:—

	£.
"1. Cost of the Fever Hospital	8,566
2. Temporary Hospitals	5,000
3. 21,691 Patients at £1. 10s. treated at the expense of the Infirmary	32,536
	£46,102

"To this amount fall to be added the expense of treating the poor in their own houses, under the district surgeons of the burgh, and any sums expended by the heritors, or the gorbals and barony parishes for similar purposes. But this sum must have been greatly increased by the demands of pauperism produced by fever on our poors' rates, and on the private benevolence of our citizens; for the duration of the disease, and the period of convalescence, which must elapse before an individual can resume his work, will average rather more than six weeks, and when to this is added again the difficulty of again finding immediate employment, we may safely assume that the 12,895 treated in the fever hospitals, during the last seven years, all, with few exceptions, depending on their daily labour, and extending the benefit of that labour to others, were out of employment for a period of at least six weeks." 207.

VI. Evidence of the Effects of Preventive Measures in Raising the Standard of Health and the Chances of Life.

Mr. Chadwick properly adduces the improved health in prisons, as compared with former times, as a good proof how far corrective means of a sanitary character may be satisfactorily attempted. He also shows that the conditions of the prisons, at the period when Howard visited them, was in no-wise worse, nor called louder for amendment, than some of the crowded neighbourhoods of the present day. It is a subject of frequent observation, that while these are sometimes ravaged at the present day by deadly epidemics, the health of the inmates of neighbouring prisons continues satisfactory. Mr. Finlaison states that, were any benefit society to employ a scale of premiums founded on prison experience, it would be insolvent in three years.

No less triumphant is the testimony afforded by the sanitary condition of the navy, for while in 1726, Admiral Hosier in sailing to the West Indies, buried his ship's company twice, and Dr. Wilson, in his Preface to the Medical Reports, observes that within the limits of the South American Command, the Centurion lost, a century ago, 200 out of 400 men from scurvy: from 1830 to 1836, the British squadron, employed in South America, lost by disease of every description only 115 out of 17,254 men. In 1779 the proportion dying of the employed was 1 in 8; in 1811, 1 in 32; from 1830 to 1836, 1 in 72.

The author enters into detail to prove that the expense, even if defrayed by the labouring classes themselves, of effecting an improved condition of their sanitary state, would be infinitely less than is entailed upon them now by loss of work incident to sickness, as shown by their insurances made in benefit societies. And even supposing some additional demand were made upon them, its defrayal might be accomplished by diminishing their enormous expenditure for ardent spirits, tobacco, beer, &c.—amounting to about 40 or 50 million per annum.

He deprecates strongly the policy of exempting low-priced tenements from contributing to the taxes, thereby encouraging the creation of masses of wretched and ill-conditioned abodes, whose rents are only higher in consequence of such exemption. But, as was before observed, the initiative must at least be undertaken for these classes, for, what with the necessity they are under of residing in the immediate vicinity of their employment, and their inability themselves to undertake the amendments of sewerage, ventilation, and construction of their dwellings, it is obvious that they are themselves unable to *originate* (however much they may be afterwards able to confirm and profit by them) any marked improvements in these respects. The influence and power of the large employers of the manufacturing and other classes are great, and their responsibility proportionate, and we do not hesitate to say that the majority are culpably indifferent, and disgracefully negligent in providing for the mere physical comforts of those who have no other protectors. The few who have erected commodious residences for their work-people have reaped their reward, not only the richest and most gratifying of all, in beholding the vast consequent moral and physical improvement often in cases apparently

hopeless, but also a reward, not to be passed over, in their improved capabilities for, and regularity at work. So that several who have commenced their improvements from purely philanthropic motives, have been surprised to find the pecuniary advantages proceed *pari passu*. One employer states that, for £7000. he would not exchange his collection of improved work-people, which he had accumulated around him in comfortable abodes, for the promiscuous assemblage usually found in similar manufactures. The payment of the operatives, too, in the place of business instead of at the public house, and at an early period of the day, has been found powerfully instrumental in promoting the happiness of themselves and families by diminishing the temptation to dissipation and extravagant expenditure—other employers have eminently contributed to the health and cleanliness of their work-people by employing some of their large supplies of water as baths, and insisting upon a certain degree of decorum and personal neatness. Again, how many means may be put into force for partially obviating the inconveniences of many employments, as of plumbers and painters, those which create dust or noxious fumes, &c.: but it must be acknowledged, that the carelessness and prejudices of the operatives themselves much impede the general adoption of these. The author likewise dwells forcibly upon the necessity and advantages of maintaining and throwing open wide spaces for public resort and amusement.

Some examples are given, also, of the erection of an improved class of cottages in the rural districts, and the same invariable good effects have followed the proceeding.

VII. RECOGNIZED PRINCIPLES OF LEGISLATION AND STATE OF THE EXISTING LAWS FOR THE ROTECTION OF THE PUBLIC HEALTH.

The author passes in review the state of the existing laws in this country contributing to the protection of the public health, but it requires no exposure of this kind to prove to our readers that the same imperfect, piecemeal, and obsolete legislation which disgraces our country in so many other particulars, is pre-eminent in all matters relating to public hygiene. Who could have believed, until a disagreeable experience had enlightened them, that in the greatest, the most wealthy, and the most crowded metropolis of the world we should find a building-act prevail which only extended to a limited district, so that beyond this, the slight protection which party-walls give against the extension of fire is not insisted upon, and that even within the limit of its operation it is constantly evaded, and extensive conflagrations, involving great loss of life and property, continually result—that with an abundance of water, a deficiency is often found at fires, no provision for public baths exist, no employment of it for the purpose of street cleansing and purification occurs, and thousands of the poorest houses, where, on the score of health, it is most wanted, are destitute of it, though it may be rushing by their very doors in its subterraneous conduits—that any builder, who chooses to indulge his caprice or his cupidity, may construct this or that alley or cul-de-sac, excluding its inmates from all view and enjoyment of exhilarating sunshine and ventilating breezes, and not even providing the dens he has created with the means of dismissing the

refuse of the wretched beings who are to inhabit them—that the *abattoirs* of the metropolis with all their reeking impurities exist in its very centre, with a slaughter-house for sheep in the cellar of every butcher in its numberless streets—that the church-yards, although loaded to the very surface, and infecting whole localities by their noisome stench during the prevalence of hot and close weather, still continue to receive the dead*—that volumes of the densest smoke, which might be profitably, and which ought to be, profitably or not, consumed, is vomited forth from all the great factories and breweries, and from the steam-boats on the river, in such profusion, that the Sunday, when a part of these nuisances is abated, is recognizable by the superior clearness and purity of the atmosphere—that our streets in snowing or wet weather are rendered impassable by reason of the accumulated filth, defying all efforts at cleanliness, and this, although thousands of poor creatures would be glad to earn an honest penny by its removal—that the sewers in the localities where they do exist are frequently choked up from their faulty construction, and become in consequence disgusting nuisances—that it is but the other day we have begun legislating for children of tender years, and woman herself is condemned to excessive or brutalizing employment, in our factories or coal mines. We might swell this list of faults of omission and commission to many pages, but refrain, merely protesting, that while such things are, we should be a little more chary in bestowing upon ourselves the epithets of a practical and common sense, a clean, and a humane people. We may, however, justly term ourselves an impartial people in the distribution of these nuisances, for if the vicinities of St. Giles and of Whitechapel reek with impurities and fever-generating nastiness, the country residence of our Queen is surrounded by similar agreeables; and if numbers of our population are swamped in superfluous moisture and poisoned by our dingy atmosphere, her London palace is built in a marsh, opposite a stagnant pond rich in malaria, and is ever and anon obscured from sight by the unconsumed smoke of the great Pimlico brewery.

The only means of taking cognizance of nuisances (besides indictment) annoyances, &c., and that to a limited extent, seems to be by, the Leet Jury—a body of perambulating honest citizens, who when first established might have been efficient, but who, in the present day, like the Coroner's inquest, and other of our tribunals, form but a clumsy and imperfect piece of mechanism for attaining the ends in view. Tailors, grocers, butchers, &c., taken pell-mell from the vicinity, are ill-qualified to perform functions requiring the skill of the surveyor, the science of the physiologist, the experience of the physician, and the patience of the statistical inquirer. Neither private individuals nor this body can act against a nuisance without all the annoyance, uncertainty, and expense of a prosecution.

Mr. Chadwick's suggestions are deserving of attention. He maintains that the road-cleansing and sewerage, including house-drainage, would be rendered less expensive and far more efficient, by consolidating the ope-

* The immediate vicinity of one of the worst of these disgusting nuisances has been chosen for King's College Hospital.

rations of the various districts, and submitting them to the superintendence and management of efficient *responsible* and scientific officers—rendering geological strata and not topographical divisions the basis of operation. He does not consider that permanent *boards of health*, composed of medical men, which have frequently been suggested, would prove sufficiently practical in their proceedings, and that the first improvements lie more in the province of the surveyor and engineer than the physician. In lieu of these, he proposes it should be one of the additional duties of the medical and relieving officers of the various Poor-Law Unions, to investigate the condition, and to report on the defects of the sanitary condition of the habitations of the poor which they visit; and that, upon their representations, the local executive powers should have power to forthwith act for the remedying the same. A more efficient system of inspection could not be devised, as the duties of these officers bring them necessarily into all the worst abodes and refuges of misery in their various localities. For these duties, he admits, they should be *remunerated*, as being extra to their proper functions, and unless they were so, we hope that the ruling powers would not have the effrontery to demand these arduous services at the hands of those who are already overworked in proportion to their pay. The disinterestedness and generosity of medical men have been carried so far, that in all inquiries, reports, certificates, &c., it is at once, as a matter of course, concluded they will give their services gratuitously. Even in the work we are now reviewing, we find the following note to the directions to the Assistant Commissioners, for obtaining laborious reports from leading medical men, involving great sacrifice of time and responsibility.

"3. In large towns, to request some physician, or general practitioner of eminent reputation, to prepare a report (founded upon data obtained from the various dispensaries, infirmaries, fever hospitals, and other similar establishments) respecting the circumstances promoting the prevalence of contagious and infectious disease in such large towns.

"The Commissioners will be glad to receive from you the name of any physician or general practitioner of sufficient eminence* to obtain the requisite data.

"*Note.* The Commissioners have no money to remunerate physicians; and those named should be distinctly informed that the service will be purely honorary."—*Circular Letter*, xii.

It is much to be regretted indeed that the remuneration of the poor-law medical officers is not such as to enable them to attend exclusively to their public duties, without reference to private practice, in which case, the various researches in medical statistics, and inquiries similar to the present instituted by the Commissioners, might properly be assigned to them.

Mr. Chadwick thinks a system of *inspection* would be acceptable to the profession and serviceable to the public.

"Medical officers, as private practitioners, are often dependent for their important private practice, and even for their office, on persons whom its strict performance might subject to expense, or place in the position of dependents.

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* The reader will observe that when the Commissioners get them for nothing, they are laudably anxious that these services should be of the first quality. It is quite another thing when they pay for them, as their contract system witnesses.

Under such circumstances it is not unfrequent to hear the expression of a wish from these officers, that some person unconnected with the district may be sent to examine the afflicted place, and institute the proper proceedings. The working of the provisions of the Factory Act, for the limitation of the hours of labour of children, has been much impeded by the difficulty of obtaining correct certificates of age and bodily strength from private medical practitioners. On this topic a large mass of evidence might be adduced, showing the unreasonableness of expecting private practitioners to compromise their own interests by conflicts for the public protection with persons on whom they are dependent." 350.

After an allusion to the valuable services rendered by Drs. Arnott, Smith, and Kay, Mr. Chadwick continues—

"But the results of such occasional visits appear to prove the necessity and economy of an increase of the permanent local medical service, and to establish a case for the appointment of a *superior medical man for a wider district* than an ordinary medical officer, for the special aid and supervision of the established medical relief. It will be frequently found that there is the like need of immediate local inspection of the medical treatment of the destitute that there is of a grade of inspecting surgeons for the military hospitals. It cannot be otherwise than that, amidst a numerous body of men, there must be much error and neglect in the treatment of the destitute, in the absence of immediate securities against them. The most able of the guardians would confess, that if they are not entirely incompetent to supervise medical service, they are at the best but imperfectly qualified for such a task, and the medical officers would act with more satisfaction to themselves from the supervision of officers from whom they might derive aid and confidence.

"But, besides the medical treatment of the inmates of the workhouses and prisons, there are other cases within most districts which need the preventive service of a superior medical officer for the protection of the public health. 1st. In the cases where the poorer classes are assembled in such numbers as to make the assemblages *quasi* public, and afford facilities for medical inspection, as in schools. 2d. Also in places of work and workmen's lodgings. The occasional visitation of a district officer, for the prevention of disease, would lead to the maintenance of due ventilation, and to the protection of the work-people on such points as are already specified as injurious to the health, and that arise simply from ignorance, and are not essential to the processes. An examination of such places, if only quarterly, would lead to the most beneficial results.

"So far as I have observed the working of the Factory Act, it appears to me that the duties now performed by the sub-inspectors of factories, might be more advantageously performed by superior medical officers of the rank of army surgeons, who are independent of private practice.

"The superior economy of preventive sources by such inspection will scarcely need elucidation. * * * *

* * * "One of the most important services of a superior medical officer of a district would be to ensure the entries of the causes of death with the care proportionated to the important uses to be derived from them (*e. g.* as a means of guiding the direction of preventive services.) The public should be taught to regard correct registration, as being frequently of as much importance for the protection of the survivors, as a *post-mortem* examination is often found to be." 352.

Mr. Chadwick further urges the advantage of consolidating this medical service and extending it over a sufficient field of operation.

"Indeed, the money now spent in comparatively fragmentious and unsystemised local medical service for the public, would, if combined as it might be without

disturbance on the occurrence of vacancies, afford advantages at each step o combination. We have in the same towns public medical officers as inspe of prisons, inspectors of lunatic asylums, medical officers of the new u medical inspectors of recruits, medical service for the granting certificates the Factory Act, &c. These and other services are divided in such portio only to afford remuneration in such sums as £40, £50, or £80, each; and smaller and few larger amounts.

"Whatever may be yet required for placing the union medical officers completely satisfactory footing, the combination of the services of several doctors in the service of fewer union medical officers, will be found to h vances in a beneficial direction. The multiplication or the maintenance of fragmentitious professional services is injurious to the public and to the p sion. It is injurious to the profession by multiplying poor, ill-paid, and ill-t tioned professional men. Although each may be highly paid in comparison the service rendered, the portions of the service do not suffice for the mainte of an officer without the aid of private practice; (nor do the new poor-law u with their additional laborious and onerous duties. *Rev.*) they only s therefore, to sustain needy competitors for practice in narrow fields. O such competition the public derive no improvement in medical science, for s comes out of wide opportunities of knowledge and study, which are incom with the study to make interests, and the hunt for business in poor neigh hoods." 354.

We have no space to enter into any criticisms of the above opinion content ourselves with laying them thus fully before our readers.

To conclude: we have only to repeat what we stated at the mencement of this article, our opinions, and in which, after the an we have presented, we doubt not our readers agree, that the worl most valuable one; and to express our regret that our limits preve availing ourselves of the various extracts from interesting evidenc ports, and inquiries with which it abounds. It is also illustrated several plates. As we suppose its price is reasonable, (it ought to b at cost price, and probably is,) we hope it will be found in many o readers' libraries, ranged with the works of Quetelet, Porter, Haw Villermé, Parent du Chatelet, and other valuable statistical and eco cal writers. Facts and figures, thus accumulated by able hands, distr as they too often now are, by hasty, prejudiced, and superficial inqu will one day form, wielded by genius, the key for the solution o sublimest problem ever proposed by human creature—the greatest h ness of the greatest numbers.

COMMENTARIES ON SOME DOCTRINES OF A DANGEROUS TENDI IN MEDICINE, AND ON THE GENERAL PRINCIPLES OF SAFE P TICE. By Sir *Alexander Crichton*, M.D., F.R.S., &c. &c. pp. 283. Churchill, London, 1842.

THIS is one of those books that are incapable of analysis, and for reason, that these Commentaries are so many critiques on theories

practices—doctrines and dogmas—men and things. When we reflect that these Commentaries were written when the author was close bordering on the 80th year of his age—that the style is vigorous and perspicuous—that the information, physiological, pathological and therapeutical comes down to the very instant of publication, we are absolutely astonished at the apparently unimpaired strength of mind and general intellectual powers of this venerable octogenarian!! He must be a descendant of the "Admirable Crichton!"

The work consists of three Commentaries, and a large Appendix of Cases and Reports from the venereal wards of the Hamburgh Hospital, illustrating the non-mercurial treatment of syphilis. The first Commentary is on "the functions of the heart and arteries in health and disease," and opens up the long disputed question whether arteries are muscular or elastic, or both. In this part, the doctrines of physiologists, from Harvey and Haller to Young and Phillip, are critically examined and commented on, and the doctrines and experiments of the *latter* very roughly handled. Sir A. comes to nearly the same conclusion as Dr. Young did, that the circulation depends on the muscular force of the heart and the ELASTIC contraction of the arteries on the blood injected into them—a doctrine so beautifully illustrated and proved by the late Dr. Parry, of Bath, to whose experiments our author does not allude.

In an appendix to the preceding commentary, Sir A. makes some useful remarks on "exercise and inaction," though nine-tenths of the world are unable or unwilling to apply them to themselves—because they are not, in fact, masters of their own actions. After showing the errors and bad consequences of violent exercise succeeded by inaction and indulgence, Sir A. observes:—

"A good rule for the employment of exercise, with the view of prolonging life, consists in taking it, not once, nor even twice, but several times a day; for by so doing, the force of the circulation is sustained, and organic structure safely increased, on the principle on which all parts are nourished.

"Bodily inaction ought not to be persisted in for upwards of four hours consecutively, if perfect health is the object, except during sleep. And for people in health this tempting state of repose ought not in general to be prolonged above seven hours. For the last forty years of my life, I have made it a rule not to remain longer quiescent, during the day, than three hours at a time; and I attribute the good health I enjoy at my advanced age, chiefly to this cause; for I must confess that I scarcely owe anything to dietetic rules, having never been a rigid observer of them." 39.

The second Commentary is on the doctrines and practices relating to fevers. In this, our author comments on various systems and their originators—from Clarke and John Brown, down to Broussais and the present practitioners. The doctrine of topical inflammation as the cause of adynamic fevers, viz. those of Clutterbuck, Broussais and all that class, are severely criticised by our author, who seems to labour under a hœmaphobia; or dread of blood-letting. Sir A. inclines to the doctrine that the matter of contagion acts primarily on the blood, vitiating its composition, and afterwards on the brain and nervous system, thus deranging all the various functions of assimilation, secretion, digestion, &c. He inclines to the doctrine of Liebig, viz. that "if the exciting agent of chemical meta-

morphosis be a compound body, which, in the act of decomposition, it will re-produce itself *ad infinitum*, provided the compound body on which it acts contains elements fitted for such an end."

We shall not, however, follow our author through all the mazes of theory and speculation, from which, we regret to say but little profit can be drawn. Come we then to the treatment of fever of a typhoid character. Our author observes, that it has always been a primary object to allay the perturbation in the circulation, though the means have varied with the theoretical views of the practitioner. The analogy between a continued and intermittent fever, is perfect at the beginning, but ceases after the first day or two. Still he thinks the *causes* of continued and intermittent fevers differ more in the degree of force or dose than in kind.

"The process of nature, by which a paroxysm of ague terminates favourably, is by profuse perspiration; that is, by the loss of a large quantity of circulating fluids. But this fluid is not blood. It consists of a portion of the liquor sanguinis, which has lost all vitality, and is loaded with chemical compounds that have been formed during the cold and hot stages of the paroxysm; during which the excretions by the urine, by the skin, and by the lungs, have been suppressed." 124.

Sir A. avers that he has rarely seen any success attendant on the attempt to imitate Nature in the manner above described; viz. by sudorifics.

"The process of unassisted nature in curing the long protracted paroxysm of a continued fever is conducted on the same general principle as that which she observes in the paroxysm of an ague; that is, she reduces the quantity of circulating fluids until she brings about an equilibrium between them and the weakened forces which are to propel them, and when this happens, a critical sweat now and then occurs. But in agues, the energy of the brain being less affected than in typhus, the heart and arteries exert greater influence, and consequently, the canals through which perspirable fluids pass, are sooner forced open by the quickened action of the heart, and continued pressure of blood a tergo." 129.

Our author's experience of blood-letting in typhoid fevers amounts to this:—"that it is a hazardous practice if adopted as a general rule; and that in any case, even of suspected inflammation or threatening congestions, it ought seldom if ever to exceed two ounces at a time."

In synochus, with full and quick pulse, with delirium or severe headache, flushed countenance, intense heat, and general pain, Sir A. would not object to the abstraction of eight or ten ounces of blood from the arm; but would prefer the application of six leeches to the neck, with warm poultices: afterwards cold applications to the head, and alterative doses of calomel. Sir A. has never seen a single case of acute inflammation of the peritoneum, liver, or intestines, "even in the first stage of typhus." We certainly cannot completely corroborate this observation by our own experience; for if every criterion of active inflammation was not entirely fallacious, we have very frequently seen the complication of low fever and inflammation, especially of the lungs, in the Winter season. Our author thinks that, ever since the days of Cullen, emetics in the early, perhaps in all stages of typhus, have been too much in disuse. A favourite emetic of Sir

A. is a scruple of ipecacuanha with one drachm of oxymel of squills. When petechiæ or vibices show the impoverished state of the blood, the mineral acids are indicated. Warm baths are considered as doubtful remedies. They have sometimes more than answered his expectations,—at others aggravated the complaint. Sir A. thinks that twenty minutes in the bath is sufficient.

"Upon taking him out of the bath he ought to be instantly conveyed to his bed, from which the sheets have been previously removed. He may either lie between two fine light woollen blankets, or in fine flannel. The moisture on his skin is then soon converted into vapour, which promotes the perspiration. The patient ought not to be dried when he comes out of the bath." 139.

Sir A. recommends a trial of the belladonna practice, as employed by Dr. Graves of Dublin, and noticed in this Journal some time ago. The author, however, has no experience of the remedy. But the febrifuge which has found most favour in his sight, is the cold affusion or bath of Wright, Currie, and other eminent physicians. Sir A. prefers immersion to aspersion, as in the *latter* operation the patient must be kept upright and is apt to faint, in which state it is dangerous to proceed.

"The immersion may be employed at any period of typhus, provided the skin be hot and dry, and the pulse moderately full; but it is chiefly useful in the early stages of the disorder, before the patient is too much exhausted, and probably before local inflammations happen." 150.

The third Commentary is on the mysterious subject of Insanity. Sir A. justly observes that there is not a single mental manifestation belonging exclusively to insanity. Every individual phenomenon in this disease, may be, and often is, produced by other disorders, as delirium, fevers, metastases, hysteria, &c. &c. The following passage would seem to clear the way to that precious desideratum—a definition of insanity.

"In every case of disordered intellect which does not fall within the true character of insanity, we discover decisive symptoms of other disorders, which either precede or accompany the aberration of reason, and which account for the mental phenomena; whereas, in true insanity, let its variety be what it may, even acute mania, in which the whole faculties of the mind are in a state of great confusion, there are no corporeal symptoms to which the psychological phenomena can be referred; for, although it cannot be denied that in cases either of acute mania or of maniacal melancholy some symptoms of bodily disorder may at times be discovered, yet these are so disproportionate to the mental affection, and are so uncertain and variable in their appearance, that they cannot be considered as essentially connected with the malady." 160.

Our author admits that certain morbid conditions of the brain, "as tumour, may produce palsy and insanity," but he goes on to say, that "it does not follow that the cerebral affection which produces mania, must, of necessity, occasion palsy." No, but it proves that physical alterations do produce insanity in some cases, and if so, why not in all cases? After showing the unsatisfactory terms in which definitions of insanity have hitherto been exhibited, Sir A. ventures on his own: voila—

"*Insanity is a disease of the brain, which causes the patient, while awake, to mistake the phantoms and operations of imagination for realities, which, conse-*

quently, become the motives of his discourse and actions, while at the time there is an absence of any bodily disorder that can account for the phenomena." 165.

Now as brevity is the most valuable quality of a definition, why not say explicitly that "INSANITY IS A WAKING DREAM," for this is the sum and substance of the above definition? How far it will stand the test of the jury-box we do not pretend to say; but we confess that we should mount that rostrum with some trepidation, were we only armed with Sir Alexander's shield. "MANIA IS A DISEASE OF THE BRAIN," says our author; but he does not clearly impart to us what that disease is. The preliminary symptoms generally evince "*cerebral excitement;*" but not always, and therefore cannot be taken as the pathognomic phenomenon.

"But there is one preliminary symptom of insanity, in general, which is common to all the foregoing classes, namely, an almost complete change of moral character." 167.

Our author repudiates the doctrine of insanity being a disease of the mind, if by mind we mean the soul, or the "immaterial agent which directs our reason or moral feelings."

"The brain is the only viscus of the human body which performs two functions that are essentially distinct from each other. There is, in fact, not a shadow of resemblance between them; and this justifies the conclusion that there are two distinct agencies operating on the brain, to which the two classes of phenomena are to be referred. One of these agents is the living principle which is common to all the organs of the body, by the laws of which, its animal functions are performed and maintained; such as its nutrition or renovation, and the forming a peculiar stimulant, which is conveyed by the nerves to every part to which they are distributed. The other is that mysterious and spiritual agent, to which conscience and reason, and indeed all the intellectual faculties, must be referred." 169.

Our author justly considers the anatomical researches of Foville and Delaye as the very best that have ever been made in respect to the condition of the brain in insanity. These gentlemen always took care to have a sound brain on the table while dissecting the brain of a maniac. In acute cases of insanity, the cineritious part of the brain was discovered by these gentlemen to be preternaturally red and congested. In early stages of acute insanity, no adhesions of the membranes to the cortical substance were discovered; but, in chronic cases these adhesions were very common. Dr. Carpenter has come to very similar conclusions.

"REFLECTIONS ON REMEDIAL TREATMENT."

Several eminent physicians, especially Rush, Haslam and others, have considered acute mania as closely allied to inflammation, and have vouched for the great benefit derived from blood-letting in the early stages. Sir A. demurs to these statements; but as he never had the charge of a lunatic hospital or asylum, he offers his opinions with some degree of diffidence. He strengthens his anti-venesections, however, by many good authorities as Pinel, Esquirol, and others. Sir A. is convinced, that although the anatomical characters of inflammation are cognizable in the brain aft

death, yet that they are not the sequences of actual inflammation—in short, that maniacal inflammation is of a specific kind, and not amenable to the same remedies as common phlogosis.

Of all the remedies which our author has employed in the treatment of acute mania, the tartrate of antimony has proved the most efficient, in doses of one-fourth to one-sixth of a grain every four hours. It must be employed uninterruptedly for some weeks, if the paroxysm lasts so long. He has sometimes combined it with camphor, but not at the beginning. In conjunction with this remedy, he puts the patient daily into a tepid half-bath for half an hour. The bowels are to be kept open once or twice a day. In the latter years of his practice Sir A. was in the habit of giving a grain of extract of colchicum—four grains of colocynth—and a quarter of a grain of belladonna at night, as an aperient sedative. The shaven head is recommended to be frequently sponged with cold vinegar and water. When the scalp is hot, and the delirium excessive, he applies some leeches to any part of the head. Blistering the scalp, and affusions of cold water he considers as hazardous. Low diet in the acute stage, and generous fare in the stage of collapse are properly advised.

There are a few pages dedicated to, THE CRIMES WHICH ARE IMPUTED TO INSANITY," but this small portion of the work needs not any special notice in this journal.

Some 80 or 90 pages are devoted to a subject that has now nearly lost all its interest—the treatment of syphilis without mercury. There are still some surgeons in this country who try this experiment on others, but very few, we suspect, who would do so on themselves. The reports of Dr. Gunther and Fricke, at the Hamburg Hospital, in 1828, were in accordance with many other reports of a similar nature in this country—namely, that the treatment of syphilitic diseases was not only more easy without than with mercury; but that fewer cases of secondary symptoms occurred.

"At the present moment (says Fricke,) in which this is written, (February, 1828,) and after a lapse of a year and a half since the non-mercurial plan of cure began, and after one thousand patients have been subjected to it; the result has been so fortunate, that we have no reason for abandoning it or of recurring to the old practice." 209.

Alas! Eighteen months afford but a very uncertain basis for the substantiation of a new doctrine or practice! Fourteen or fifteen years afterwards, and the non-mercurial practice was scarcely thought of, except in some rare cases where mercury was found to be inadmissible. The new practice, however, was productive of much good. It taught us to use mercury with less prodigality—that very low living tended greatly to suspend the progress of syphilis—and to prove a valuable auxiliary to the moderate and judicious administration of the specific mineral. This is a greater good than has resulted from any new practice that has not been able to fulfil its original pretensions.

We now take leave of our venerable and highly respected author, concluding with the Oriental salutation—"MAY YOU LIVE A THOUSAND YEARS."

OUTLINES OF PATHOLOGY AND PRACTICE OF MEDICINE. By *William Pulteney Alison*, M.D. F.R.S.E. &c. &c. Part I. PRELIMINARY OBSERVATIONS. Part II. INFLAMMATORY AND FEBRILE DISEASES. 8vo. pp. 499. Edinburgh, 1843.

THERE is not a name in Medical Literature better known or more generally esteemed in the present day than that of Dr. *Alison*. Distinguished himself, he is one of an eminently distinguished family. Few scholars have not read and admired the beautiful disquisition of his father on Taste, so replete with fine thoughts and elegant scholarship; and his brother has already gained for himself a place among the classic authors of his age by the production of his admirable History of Europe:—a work that possesses all the fascinations of a brilliant romance, and all the admonitory instructiveness of a great Moral Essay. Reared amidst so gifted a kindred, and enjoying, moreover, in early life, the inestimable advantage of having a friend and preceptor in his uncle (we believe) the late Dr. Gregory, long one of the ornaments of the northern metropolis, Dr. *Alison* started in life under the most propitious circumstances, and his career throughout has abundantly fulfilled the promise of his early years: it has been one of unbroken honour and success.

Having for several years most ably filled the chair Physiology in the University of Edinburgh, he has recently been raised to that of the Practice of Medicine; and certainly it would be difficult to find any one so well calculated to teach the lessons of sound practical knowledge to the students of our profession.

With the exception of his distinguished townsmen, Drs. Abercrombie and Thomson, he is unquestionably the most eminent physician of the day in Scotland. There is one feature in his character that deserves especial notice; we allude to his unwearied and ever-active benevolence to the poor: he is called, we believe, emphatically the sick poor man's friend. For many years he has directed especial attention to the subject of pauperism in Scotland, and he has recently written a very able pamphlet, to prove the necessity of introducing a regular system of poor-laws among his countrymen, and in opposition to the views of his eloquent co-professor Dr. *Chalmers*. The question is likely to be soon settled, as we observe, by the public journals, that Government has just appointed a commission to inquire into and report upon the subject of having a legal provision for the poor in Scotland.

The present work bears all the impress of the author's character—calm, thoughtful, and reflective. Dr. *Alison* is not so much an original thinker as a most wise expositor and a thoroughly honest reasoner. He has not the masculine vigour of *Elliotson*, the speculative ingenuity of *Billing*, nor the minute accuracy and clear penetration of *Brodie*. His writings appear to us to be often better adapted to those already engaged in the duties of our profession, than to the student who is endeavouring to obtain a knowledge of it. There is occasionally a degree of over-caution—bordering almost on indecision, and evidenced by the frequent use of the words

"perhaps," and "probably"—in the expression of his own opinions, which leaves the reader in the dark as to what these opinions really are. He has not the power of concentrating and arranging his ideas in that lucid manner, which leaves a picture, so to speak, on the mind of his reader: no one possesses this faculty more than Dr. Marshall Hall. But to make up for these deficiences, our author has the inestimable superiority over too many of his contemporaries, of never presenting any exaggerated or over-coloured statements either in the way of description or of precept. He is therefore a much safer guide than the generality of medical writers in the present day, who write more for the advancement of their personal interests than for that of professional truth.

In one respect especially, these Outlines are calculated to do much good; they will tend to diffuse more generally the spirit of an improved Humoral Pathology in the elucidation of many diseases. *Solidism* (if we must use such a word for want of another) is rapidly on the wane, and ere long the opposite doctrine will be more and more taught in the schools. The authority of such a man as Dr. *Alison* will contribute not a little to the acceleration of the change. Several of the extracts which follow, will clearly show the judicious views which he holds in reference to the morbid alterations of the fluids in different diseases, and the influence which these alterations have on the progress and result of those diseases. The first, which we select, shall be on the subject of rheumatic and gouty inflammations.

After mentioning the distinctive characters of the former—its attacking certain tissues in particular, its shifting about from one part of the body to another, and its never terminating in genuine suppuration or ulceration—our author very justly remarks that, from these circumstances, "it may be suspected that there is something peculiar in the state of the blood in Rheumatic Inflammation; and it has been generally observed, that the fibrine of the blood in violent cases of Acute Rheumatism is very abundant, and its separation from the colouring matter very complete."

Gouty inflammation, at least in particular cases, has many features in common with the rheumatic; as is evident from the fact, among others, that both diseases are liable to be followed by the formation of chalk-stones around the affected joints. Still, we should not consider them, we think, as degrees or modifications of the same morbid action, or as depending upon the same cause. We have no reason to believe that the proportion of the fibrine of the blood is at all changed in any case of simple uncomplicated gout; or, on the other hand, that there is necessarily any predominance of lithic acid or of its salts in the circulating or secreted fluids in pure rheumatic affections. That the two diseases are very often co-existent, and therefore that there is very frequently a two-fold morbid agency at work in the system, cannot be doubted by any one who has seen much practice; and indeed it seems to us that it is by keeping this idea steadily in view that the most rational and successful mode of treatment is suggested in a great variety of cases. Perhaps the following remark by Dr. *Alison* intimates a closer connection between them than is strictly correct. "From the whole history," says he, "of these diseases, especially from this last fact, and from the frequent connection of gout with gravelly deposits in the urine, it is pretty obvious that one condition necessary to

the establishment of these kinds of inflammation is a morbid matter, or an excess of matter destined to excretion, elaborated in the system, and circulating in the blood."

According to our views, the *morbid matter*, here alluded to, is not the same in the two cases—in the one it is excess of fibrine, and in the other a predominance of the lithates. Before quitting this subject, let us remind our readers that, in addition to these two elements of disease, in a great number of cases of rheumatic gout or gouty rheumatism, there is a third element not unfrequently co-existing—that is, neuralgia, or a painful affection of the nerves of the part. But we explained at some length our views on this question so recently,* that we shall add nothing more at present. It is satisfactory, however, to find that so experienced a physician as Dr. *Alison* distinctly recognizes the existence of a *humoral* cause both in gout and in rheumatism.

The following important extract bears upon another branch of the subject—that form of inflammatory action which is associated with a *poisoned* or vitiated state of the blood, occasioned by the admixture with it of some hurtful matter that has been either absorbed into, or generated in, the circulation.

"There are cases in which inflammation is fatal, apparently by reason of some part of the effusions to which it gives rise, being mixed with the blood, and acting on the footing of a Poison. Thus, when inflammation is excited in a spot on the surface by the application of a specific poison, as by a wound in dissection, it is speedily attended by the formation of a similar poison, which is evidently absorbed, and excites fresh inflammation in the line of its passage into the mass of the blood; but this inflammation is attended by a peculiar *typhoid* fever, in which the heart's action is rapidly depressed, which bears no fixed proportion to the extent or intensity of the inflammation itself, and by which death may take place without visible injury of any vital organ; sometimes before the inflammation has advanced beyond its first stage, and generally long before it has gone so far as in the more usual inflammation of the same parts.

Again, in the case of inflammation of the lining membrane of a Vein, it is very often observed that the accompanying fever soon takes a similar typhoid form, often with vomiting and purging, always with a feeble or depressed state of the heart's action, as well as derangement of the nervous system. In many such cases, this typhoid form of the fever, rather than any effect which we can ascribe to the inflammation itself, appears to lead to the fatal termination; in like manner as a similar combination of typhoid symptoms does, when occurring idiopathically, or as a part of a malignant contagious febrile disease: and this peculiarity of in-

* Vide the Review of M. *Bouillaud* on Rheumatism in our Number for January, 1841. We there endeavoured to point out the most important differences between rheumatic and gouty inflammations, and to explain why many cases of chronic rheumatism are so intractable under the ordinary methods of treatment. We alluded also particularly to the precursory state of the system, when the disease is *incubant*, and has not yet manifested itself. Dr. *Alison's* views seem to coincide very nearly with those which we then expressed. He observes, in his remarks on the usual causes of rheumatism, "there is no doubt some previous peculiarity in the constitution, which disposes certain individuals to be affected in this way:" and he goes on to say that several circumstances "lead us to suspect that this peculiarity consists in the constitution of the *blood*."

flammation of this part has been ascribed to the necessary admixture of much of the inflammatory effusion with the circulating blood, with more probability than to any other cause."

The history of many cases of large chronic abscesses, of puerperal fever, &c. will naturally occur to the mind of the medical practitioner, as he reads these most truthful observations of our author. Dr. *Alison* alludes to the not unfrequent development in cases of suppurating wounds, after small-pox, &c., of rapid secondary inflammation and effusion of pus in the internal organs (the metastatic abscesses of French writers) chiefly the lungs and liver, causing death as primary inflammation would do; but he does not touch upon the disputed question whether, in such cases, the purulent matter is always absorbed from the seat of the local disease, and whether there is invariably an accompanying phlebitis—as alleged by several writers of the present day. In the last Number of this Journal, pages 222–8, the reader will find some interesting remarks on this subject from the recently-published memoirs of MM. *Tessier* and *Blandin* of Paris.

As a good specimen of the preceptive character of our author's writings in matters of practice, we select the following passage on the occasional effects of losses of blood, whether artificial or not, upon the system. He has been inculcating the necessity of vigorous depletion in cases of active inflammation, and of watching the effects of the treatment on the pulse; then he adds the important caution.

"It must be allowed that there are many cases in which the system is powerfully affected by loss of blood, in which the repetition of the remedy is dangerous, if not immediately, at least in its ultimate result in the disease; and in which, nevertheless, there is a fallacious degree of fulness and even strength of the pulse, and a combination of symptoms which to those unaccustomed to observe them might seem to denote determination to the head, perhaps inflammation of the brain, and to demand farther loss of blood.

"Of the possibility of this fallacious fulness and even sharpness of the pulse (generally a somewhat tremulous and easily compressed, but nevertheless sharp pulse, according to the notion formerly explained as being annexed to this last term), some of the experiments of Dr. Parry on animals killed by repeated bleedings, and in which the pulse was 'full and bounding' almost to the moment of death, afford unequivocal proof. And many practical observations by Rush, Armstrong, Marshall Hall, Travers, and others, illustrate this 'reaction after the loss of blood;' which may perhaps be most correctly described as a modification of the inflammatory fever, produced in a great measure by the loss of blood, and persisting after the local inflammation has subsided, or passed into a state no longer demanding evacuation. This peculiar febrile state is marked by the frequent, full, vibrating, or sharp, but easily compressed pulse, with heat of skin, generally, however, not persistent if the bedclothes are removed from the part felt,—generally with sense of palpitation and of throbbing in the head, and tinnitus aurium; sometimes impatience of light and sound;—the symptoms aggravated, and vertigo produced by the erect posture; the face and lips pale, and all muscular motion difficult and generally tremulous. This state occurs chiefly in females of irritable constitution; and is best relieved by alternation of laxatives and opiates, often with the cautious use of wine, ammonia, or other stimuli. Where it co-exists, as occasionally happens, with still urgent symptoms of local inflammation, it presents a case of much difficulty, but in which, although blood may often still be taken locally, general blood-letting is certainly dangerous." 231.

The obstetrical physician has more frequent opportunities than any other of appreciating the accuracy and practical value of these remarks, as the series of symptoms so well described by our author is very often observed after great uterine hæmorrhages. In the treatment of such cases, Dr. A. omits to mention the necessity of absolute rest and quietude both of mind and body—perhaps the most important precept of all. It is truly astonishing to notice the difference in the progress and result of similar cases in different patients, according to the character of their temper and character, whether these be cheerfully calm and resigned, or impatient and desponding. The importance of proper religious feeling under such circumstances is immense.

Dr. *Alison* is evidently not favourable to the Continental practice of administering the tartrate of antimony in large doses, as a contra-stimulant, in internal inflammations: this practice has never been fairly established in this country. He rightly prefers the English method of giving it in quarter or half-grain doses every two hours or so, to induce and keep up a state of constant nausea. Thus used, it is, as he observes, the most powerful auxiliary to blood-letting in the early stages of inflammations within the chest, especially in that of the substance of the lungs; it is moreover a very powerful remedy in those cases of affection of the brain occurring in fever, in which there is a high delirium and an approach to inflammation, though without nausea.

In closing his directions on the treatment of inflammation in general, the author makes some admirable remarks on the necessity of using stimulants freely in certain cases, whether either the duration of the disease itself, or some other circumstance, has induced much prostration and tendency to a fatal sinking of the powers of life. In the advanced stage of enteritis for example, when the pain ceases, the pulse gives way, and the surface becomes cold and clammy, the patient, as Dr. *Abercrombie* has convincingly shown, may sometimes be saved by the cautious but continued use of stimuli. In bronchitis, also, if the breathing becomes very short and hurried, and the pulse tremulous, and when the mucous and subcrepitous râles are heard on both sides of the chest, these alarming symptoms will be occasionally relieved by like treatment—certainly not by any other. In such cases, there is usually an accumulation of mucous in the air-passages, and unless the system has strength sufficient to expectorate this freely, life will inevitably sink.

"Again," adds our author, "although there be no such immediately alarming symptoms, if bronchitis has produced general effusion into the bronchiæ (as in many advanced cases of asthma and of hooping-cough); if a portion of lung has been consolidated; if an extensive and probably partly puriform effusion from decided inflammation has taken place in the cavity of one side of the chest or abdomen; if an abscess has formed in the liver; if a portion of the mucous membrane of the intestines has been thickened by effused lymph, and then passed into ulceration; if a bone has become carious, a cartilage has ulcerated, or even a capsular ligament of a joint been much thickened by inflammatory deposits; if the cornea has been affected, first with pustules and then with ulcers, from the strumous form of ophthalmia,—whatever influence local remedies may or may not have on such lesions, it is certain that a long process of absorption, of ulceration, of healing by granulations, &c. in these different cases, must be gone

through; and that a certain degree of strength of habit is necessary, that these processes may go on favourably." 250.

In the chapter on Nephritis, there are some interesting remarks on the disease of albuminuria, and, as the profession may naturally wish to know the sentiments of so calm a thinker as Dr. *Alison*, we gladly select the following extract, wherein he gives a succinct sketch of the conclusions to which he has come from his own experience, and the study of the best authorities on the subject.

"The most important facts ascertained as to the subsequent progress of cases in which this morbid state of the Kidneys exists, are the following.

"1. That when the urine, although albuminous and of low specific gravity, is in quantity greater than natural (so that the usual amount of solid matter may pass off from the kidneys in a given time,) the general health may be tolerably good for a considerable number of years; although there is a liability to very various diseases, making a very cautious regimen necessary.

"2. That many such persons are found to be simultaneously affected with other diseases, chiefly of the liver or of the heart, which are originally of the same character, and which of course increase their liability to disease.

"3. That such persons are very liable, particularly on exposure to cold, to attacks of Dropsy.

"4. That they are also peculiarly liable (with or without such dropsical attacks) to sudden inflammation, especially of the chest.

"5. That they are liable to organic diseases of the brain.

"6. That many of them are subject to sickness and vomiting, independently of liver disease, and especially to diarrhœa; those who are subject to the diarrhœa being perhaps the least liable to the dropsical affections.

"7. That when the quantity of urine becomes less (as very generally happens in the progress of such cases,) and its specific gravity and the quantity of solid matter and even of albumen in it diminish at the same time, we must expect, not only that these complications will become more frequent and intractable, but that they will be attended with more or less of the characteristic effects of the presence of Urea in the nervous system, particularly drowsiness, spasms, indistinct vision, &c. and ultimately delirium and fatal stupor." 331.

In the consideration of the various morbid phenomena which are apt to be induced by, or at least to be associated with, this peculiar state of the urinary secretion, the physician will, as a matter of course, never lose sight of the important fact, that the constitution of the blood is usually found to have undergone great alterations from the standard of health; its normal proportion of albumen, and subsequently of its colouring matter also, being decidedly diminished, while at the same time it contains, at least in some cases, a certain quantity of urea.

No subject has engaged more, or perhaps so much, of our author's attention than that of Fevers; and, as might be expected, the whole of the chapter, which he devotes to their consideration, is full of sound and most useful observation. We need scarcely say, that he avoids all *exclusivism*, either in theory or practice, in reference to this class of diseases, and that he entirely rejects the notion of so many writers of the French school, that they are merely the results or effects of any local lesion, whether in the intestines or elsewhere. He repeatedly speaks of a morbid agent at work within the system, that is quite independent of any local inflammatory mischief, either in the head, chest, or abdomen, and which exerts a

depressing influence on the vital energies of the body, as manifested by that train of symptoms to which the appellation of *typhoid* has been applied.

This morbid agent he views in the light of a *poison*, that has been absorbed into or generated within the system, and of which one of the most constant effects, is to induce an alteration in the constitution of the blood; but whether its primary operation is on the nervous or on the vascular system, he does not presume to determine.

"In a great majority of the cases in which we see typhoid fever, we are sure that some peculiar matter, generally absorbed from without, must be contained in the blood; as in the case of fever from malaria, from contagion (whether of simple fever or the eruptive fevers) from inflamed veins, from animal poisons introduced by wounds, or from suppression of the natural excretion of the kidneys. That this peculiar matter, or the blood altered by it, should act like a ferment, assimilating much of the circulating fluid to itself, in the former case equally as in the latter, is quite in accordance with what has been observed, when purulent matter has begun to form in the blood." 4:39.

It is unnecessary to say that so accurate an observer as our author fully recognizes the frequency of local inflammation in the course of many fevers; but then he does not fail to show, at the same time, that the inflammatory action, when present—for it is not necessarily and essentially so—is always more or less modified, both in its characters during life and in its effects as found after death, from the idiopathic and uncomplicated inflammation of the same organ.

Hence we derive the important practical deduction, that the same mode of treatment that is proper in the one case, may be quite unsuitable in the other.*

Dr. A. recognizes three forms of simple or idiopathic fever;—1. The congestive, as in the bad cases of plague, yellow fever, cynanche maligna, &c. 2. The inflammatory (synochus); and, 3, the typhoid. Of this latter, he describes three varieties, which may certainly be distinguished in some cases, but which generally are blended together, or graduate into one another. The author's own words will convey his meaning best.

"*a.* When the most obvious and urgent of the typhoid symptoms are those of mere debility of the vital actions,—soft compressible pulse, dry foul tongue and lips, deficient or easily depressed heat of the surface, and extreme muscular debility, shown in the voice and attitude as well as in the muscular movements,—the name of 'Fievre Adynamique,' is given by recent French authors, and the term Low Fever is the most appropriate in our language.

"*b.* When the most obvious and urgent of the typhoid symptoms are those indicating derangement of the functions of the Nervous System—pervigilium, restlessness, tremors or spasms, deafness, contracted pupil, and other affections of the external senses, delirium, especially of the more active kind, and this after-

* According the the experience of Dr. *Alison*, serous effusion within the cranium is, probably, the most frequent morbid phenomenon in the continual fever of Scotland. With respect to the follicular enteritis, so much insisted upon in the writings of the continental physicians, he says, that it is found in a much smaller proportion of fatal cases in Edinburgh, than either in London or Paris.

wards subsiding into stupor—the case has been styled 'Fievre Ataxique' by the French, and is generally called Nervous or Brain Fever in this country. This form of fever is most remarkably seen in persons in whom the nervous system has been previously and habitually excited, either by voluntary muscular or mental exertion, or strong and lasting emotion,—or by the inordinate use of stimuli, such as alcohol.

"*c.* When the most obvious of the typhoid symptoms are those denoting a dissolved state of the blood, petechiæ, passive hæmorrhages, gangrene from slight irritations, &c. the case has still among many the name of Putrid Fever." 398.

He does not agree with those authors (and we observe Dr. *Copland* is one,) who attempt to draw a distinction between typhus and typhoid fever, grounding the distinction chiefly on the presence, in the former, of a peculiar exanthematous eruption, which the learned author of the Dictionary describes to be "as characteristic of it (typhus) as the eruptions of measles or of scarlatina."

We think Dr. A. is quite correct in his opinion that—

"The differences observed are only varieties depending on constitution, and on the agency of other causes affecting the constitution, besides the exciting cause of the disease." 447.

We have no intention of entering at present upon the wide subject of the treatment of typhoid fever, and merely wish to caution the young practitioner against ever pushing the use of depletory and evacuating remedies for the relief of the local phlogistic affections in fever, so far as in the idiopathic inflammations of the same organs. Too much attention cannot be paid to the type or general character not only of each epidemic, but also of each individual case, in the management of all fevers. Of late years. medical men have often been far too timid in the use of stimulants, allowing their minds to be continually haunted with the idea of inflammation in some part or another, even when the circulation was becoming languid and the energies of the nervous system were giving way. Not so our experienced author: for he expressly says:—

"Whenever we observe the circulation to become feeble,—or even (in Epidemics where we know that much debility is to be expected) before it has become feeble,—we use the stimulants,—chiefly wine,—in bad cases, spirits, ammonia, or æther,—in small but frequent and gradually-increasing doses,—both during and after the time when the remedies are applied to the local affections, in the hope of maintaining the requisite strength of the circulation, until the time when the spontaneous favourable change is to be expected; and although many of the cases, in which the circulation becomes very feeble, are fatal, we see many recover, both from the simpler and more complex forms, to whom the stimuli are given in such quantity as cannot be supposed to be inert; and in whom the pulse becomes less frequent and firmer under their use." 462.

With this we close our notice of the present volume, and shall not fail to make our readers acquainted with the contents of the second, whenever it is published.

ICONES OBSTETRICÆ; A SERIES OF SIXTY PLATES, ILLUSTRATIVE OF THE ART AND SCIENCE OF MIDWIFERY IN ALL ITS BRANCHES. By *A. L. Moreau*, Professor of Midwifery to the Faculty of Medicine, Paris. Edited by *J. S. Streeter*, author of Practical Observations on Abortion, &c. Folio, London, 1842. *Bailliere.*

THIS is certainly one of the most magnificent series of Anatomical Plates which we have ever seen. The drawings are quite admirable, and, indeed, could not be surpassed for accuracy and beauty.

They are from designs by M. *Emilie Beau* of Paris, and are exceedingly well lithographed by *Fourquemin*. Many of them are of the full size, and represent different views of the pelvis and its contents, as they appear in nature; others are reduced to one half the natural size.

The first four plates represent the bones of the pelvis, detached or united, in a variety of positions and sections. The fifth one gives a most instructive view of its direction and axes in the erect position, and also of the relative position of the gravid uterus, at the full period, to the brim or inlet; this plate alone is worth a volume of mere description. The following ten plates contain numerous representations of the malformations and deformities to which the pelvis is liable.

By a careful inspection of these, the student will at once perceive how seriously the process of parturition may be interfered with by even a slight deviation from the normal conformation of the osseous structure, and, at the same time, he will learn to appreciate the necessity of making himself thoroughly conversant with the various measurements and diameters of the pelvis, in order to enable him to determine the practicability of delivery, whether natural or instrumental, in such unfortunate cases. True of all things, but doubly true in medical matters, is the Horatian saying—

> Segnius irritant animos demissa per aures,
> Quam quæ sunt oculis subjecta fidelibus, et quæ
> Ipse sibi tradit spectator ——————

A glance at a good drawing often teaches more than listening to a dozen of lectures.

In plates 16, 17, 18, 19, and 20, we have most faithful views, full size, of the pelvis, with its soft linings and contents: the sectional view, in the last one, is especially instructive. Then follow the different sections of the internal genital organs of the adult female, the vagina, uterus, ovaries, &c. In plate 24, there is a graphic representation of the lymphatic vessels of the uterus and its appendages injected, in a woman who died a short time after delivery; and in 25, the nerves of the uterus are well delineated.

Passing over, with a simple notice, several of the following plates, which contain many beautiful drawings of the ovum and fœtus in the successive periods of their development, we come to plate 36, which commences a series of most valuable pictorial illustrations of the mechanism of labour in its various stages.

The relative positions of the head and body of the child with the dif-

ferent parts of the pelvic cavity during the progress of parturition, in natural as well as in irregular presentations, are most faithfully represented: the drawings, we may mention, are half the size of life.

As Mr. *Streeter* very justly observes; "the power should be acquired of seeing with the mind's eye the child through the walls of the uterus. This may be obtained by a careful study of these plates, by habits of reflection, and the aid of a little experience."

The remaining 15 plates illustrate the different operations of practical midwifery, as that of turning* in different presentations of the child, the application of the forceps, &c. &c.

Such is a brief notice of these Icones Obstetricæ, which we hope will become generally known. We are indebted for the introduction of them into this country to a most intelligent practitioner in this metropolis, Mr. *Streeter*, who is already favourably known to the profession by his recent Treatise on Abortion. He has added much to the value of the present work, by appending to most of the plates some useful remarks, in the way of commentary on each subject that is illustrated.

We have much pleasure in selecting a few passages, to anable our readers to judge for themselves of the ability with which the editor has performed his task.

1. *Sanguineous Infiltration of the Labia.*

.. .. "The infiltration is commonly confined to one labium, and comes on suddenly during the progress of, or very soon after, the birth of the child. The labium assumes a livid or black colour, and the distention is often excessive. It occasionally ruptures, and the loss of blood has been known to prove fatal.

"More commonly, the internal surface of the labium (unless freely incised, as Dr. *Dewees* practises,) sloughs, and the coagulum, which soon becomes offensive, when exposed to the air, is thrown off, by the suppurative process." .. ..

"The editor attends a lady, mother of seven children, in whom a swelling appeared at the right inguinal ring, about the seventh month of her first pregnancy. This was pronounced to be a hernia, and a truss was actually applied by a surgeon: it was worn during the pregnancy, and even during labour, but occasioned great distress. The tumour however is a varix, and associated with a dilated and turtuous vein in the right labium, as large as the little finger. The inguinal and labial varices disappear in the unimpregnated state, but regularly return about the middle of each pregnancy."

2. *Protrusion of the Bladder during Labour.*

"A more frequent (than calculus) cause of retarded labour is the protrusion

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* M. *Moreau*, the editor observes, has illustrated this obstetric operation (version or turning) at great length, devoting no less than eight plates (sixteen figures), to the elucidation of its performance, a sufficient testimony of its practical worth and importance, as a means of accomplishing delivery. The study of the two principal varieties of verison—1, that where the vertex of the child presents; and 2, that where the shoulder presents, will enable the practitioner to conceive and adapt the operation to all those minor varieties which a different position of the child, or an irregular placing of the limbs, may occasion. The successive steps of the operation are all clearly represented, and minutely, though concisely, described."

of the urinary bladder before the head of the fœtus, an accident to which Mr. *Christian* has very ably drawn attention in the 9th vol. of the Ed. Med. and Surg. Journ.

"The bladder may protrude as an elastic tumour under the arch of the pubis, occupying the anterior part of the vagina, or it may be forced down on one of the sides of the pelvic cavity. The remedy is simple—the introduction of the catheter. Dr. *Merriman* has known the tumour punctured with a fatal result, under the idea that it was the head of a hydrocephalic child."

3. *The Blood vessels of the Uterus; the inefficacy of Compressing the Aorta in Uterine Hæmorrhage.*

"The vascular system of the uterus merits the closet study of the accoucheur, in consequence of the hæmorrhage to which this organ is subject on the separation of the placenta, and from the not unfrequent occurrence of uterine and crural phlebitis. The veins are destitute of valves, and communicate so freely with each other as to present some resemblance to erectile or cavernous tissue. This readily explains the danger of the erect position immediately after delivery, and before the uterine sinuses are securely closed by the muscular and elastic contraction of the uterus, and the formation of coagula within their open orifices.

"As the ovarian arteries supply the part of the uterus where the placenta usually adheres, compression of the aorta, which is only practicable below the origin of these arteries, though recommended by high authority, can exert no other influence in stopping uterine hæmorrhage than by rousing the uterus itself to efficient contraction."

4. *Influence of the Gravid Uterus on the Adjacent Nerves.*

"The cutaneous and muscular branches of the spinal nerves, which are distributed to the lower extremities, merit some attention in an obstetrical point of view, as their functions are often disturbed during pregnancy and parturition. When he gravid uterus sinks down into the pelvis, the irritation and pressure of the cutaneous and anterior crural nerve cause pain and numbness on the fore and outer part of the thigh; when the head is passing through the brim, the obturator nerve suffers compression, and cramp is produced on the inner side of the thigh. As the head advances through the cavity, the sciatic nerve is compressed, and cramp occurs at the back part of the thigh, the calf of the leg and sole of the foot. Occasionally indeed this nerve suffers so much injury as to cause temporary lameness or even partial paralysis.

5. The following interesting remarks on *the Arterial and Venous connection between the Uterus and Placenta* are appended to Plate 30, which gives a view of the internal surface of the uterus, with the placenta adhering to it.

"The tortuous course and abrupt termination of the utero-placental arteries were represented by Dr. *W. Hunter*; and the terminal sinus of the placenta and its free communication with the venous system of the uterus by three or four apertures are figured in this beautiful plate. This utero-placental venous arrangement has been generally altogether overlooked, and the existence of any vascular communication between the uterus and placenta denied by many observers. Its unquestionable existence however proves that there is not only a fœtal, but also a maternal, portion in the human placenta, which is thrown off along with the fœtal portion at birth. * * * * The absolute necessity for this free vascular connexion between the ovum and the parent will be fully recognised when the pacenta comes to be generally regarded as the

primordial lung, as well as the stomach, of the fœtus. The placenta is in fact not only a nutritive organ, but the analogue of the allantois in the ovum of the bird,—a complex branchial or respiratory organ, operating the same changes on the fœtal blood through the sanguineous medium of the proper uterine circulation, as the gills of aquatic animals produce on their blood through the watery medium in which they live. * * * Comparative anatomy shows that the blood-vessels of the mother are in no instance continuous with those of her offspring; but in all, there is provision made for extensive approximation of the fœtal and maternal vessels. * * * The uterine veins lose their external tunic, and in the placenta retain only their delicate inner coat; the placenta is pierced like a sponge by the transmitted vessels of the uterus (the tortuous arteries of *Hunter*), and the maternal blood circulates freely in a cellular tissue round the tufted vessels of the embryonic portion of the placenta; after which, the blood finds its way into the terminal sinus of the placenta, and is returned to the maternal system by the decidual venous apertures represented in this place."

6. *Management of Foot or Breech Presentations*

"The frequent occurrence of breech and footling presentations, and the danger to which they expose the life of the child, render their proper management an object of great practical interest. From injudicious attempts to hasten or assist the passage of the nates through the vulva, the child often perishes, the cord being compressed between the head of the child and the parts of the mother.—This is owing to the soft parts being badly prepared to admit the speedy passage of the head. To guard against this danger, the nates should always be permitted to pass slowly and unassisted through the external parts so as gradually and perfectly to dilate them, and thereby facilitate the subsequent transit of the head. In this, and indeed in all instances in which a præternatural presentation is suspected, the practitioner should take more than usual care not to rupture the membranes; because, the more relaxed and dilated the soft parts are before they give way, the more favourable will be the result, and a descent of the umbilical cord—a circumstance which occurs far more frequently in feet than in other presentations—will be less likely to take place. When the nates are born, the pulsation of the cord should be minutely watched; and, if the pulsation becomes feeble or ceases, the birth ought to be accelerated by every possible manipulation, lest the child be asphyxiated by the suspension of the respiratory function of the placenta. The delay of even a few minutes is occasionally fatal, where the umbilical circulation is interrupted. When the child is expelled with its abdomen towards the pubes, it should be gently, but sufficiently turned round to direct the vertex into the oblique diameter of the brim, the most favourable position for its passage through the pelvis. The perineum should be carefully guarded."

7. *Conduct of an Accoucheur before using any Obstetrical Instruments.*

The following beautiful remarks of the late Dr. *Hugh Ley*, whose loss was so generally regretted a few years ago by his professional brethren, are given from MS. notes of his lectures taken by the Editor in 1822: they bespeak the judicious physician and the kind-hearted man.

"When the symptoms demand the use of instruments, it is right to explain to the friends the necessity and grounds of their employment. This gives them the opportunity of having a consultation, which is always desirable when the circumstances of the case will admit. You should also prepare the mind of your patient by telling her that the time has now arrived for delivering her, that the head sticks in the passage, and that you are going to use *a pair of artificial hands* to fetch it. Show her first one blade of the forceps and let her feel its smoothness and satisfy herself that it has no cutting edge, and then the other, but

always separately. If the forceps are locked when she first sees them, they suggest to her mind the idea of a cutting instrument like a pair of scissors—You may then apply them gently over her closed hand, taking care not to press the blades too much so as to hurt her. In this manner you may sooth her fears, and, when so explained, they seldom create much alarm. Indeed, you will be much more often urged to apply them when unnecessary, than have their use objected to when required. *Never employ any instrument secretly;* that is morally wrong, and it is also unwise, because it deprives you of a certain amount of reputation, which always attends the use of instruments, and which may lead to your professional success I know one individual who dates his first introduction to fashionable practice, from nearly breaking the jaw of a young baronet by the use of the lever, in a case where he now doubts the propriety of his having employed any instrument at all."

In taking leave of this work, we cannot too strongly recommend it to practitioners in general, and more especially to all lecturers on midwifery: the drawings require only to be seen to be appreciated. With the advantage of such a series of plates, and by frequently exercising himself with a female pelvis and a full-grown fœtal head, a student might in six months acquire a really practical knowledge of many of the most difficult emergencies that are apt to occur in the art of midwifery. We are glad to find that Mr. *Streeter* makes repeated reference to the clinical report of Dr. *Collins* of Dublin—a work which, at the time of its publication five or six years ago, we pronounced to be one of consummate interest and value.

THE PHYSICAL DIAGNOSIS OF DISEASES OF THE LUNGS. By *W. H. Walshe*, M.D. Professor of Pathological Anatomy in University College London. Taylor and Walton. 1843.

THE object of this little book, the perusal of which will amply compensate the reader for the time spent on it, is, to present a concise view of the principles and facts of physical diagnosis as applied to diseases of the respiratory organs. It consists of Three Parts, in the first of which the various methods of physical examination, and the phenomena detected by them in health and disease, are described. The Second Part contains a tabular view of the physical causes and ordinary seat of all morbid signs in connection with the names of the diseases, in which they occur; and also a synopsis of the signs attending each affection of the lungs, pleura and larynx; while the Third Part forms a commentary on the other two. The diseases of the respiratory organs are among those of which the physical *signs* are best understood; the *methods* employed in their detection are:—1. *Inspection:* 2. *Application of the Hand;* 3. *Mensuration;* 4. *Percussion;* 5. *Auscultation;* 6. *Succussion;* 7. *The Determination of the Situation of surrounding Parts and Organs.*

There being nothing of a decidedly noval character in the author's description of the mode of practising Inspection, Application of the Hand, or Mensuration, and these methods having been already noticed sufficiently

by Sir J. Clarke, Stokes, Louis, and recently by Woilley, we shall merely give the morbid states ascertained by them.

MORBID STATE DISCOVERED BY INSPECTION.

A. *Form.*—The different changes of form (heteromorphism) and of position (heterotopia) of the whole chest or of its parts, which may announce subjacent disease, are referrible to the following species:—

Expansion and Bulging.
Retraction and Depression.
Procidentia and Elevation.
Curvature.
Distortion.

Expansion is a change of shape, in which one or both sides of the chest is rendered prominent; whilst *Bulging* is a local, or circumscribed expansion.

Retraction and Depression are the converse states of expansion and bulging.

Procidentia is that state in which the position of a part is slightly lower than natural; *Elevation* that in which it is higher. *Curvature* signifies that deviation of the various axes of a part in which some degree of regularity of form is retained; *Distortion*, a displacement of the same kind fundamentally, but one in which the deviations are so numerous and so considerable that all trace of regular shape is lost. The other states refer to *Size* and *Motion*.

MORBID STATES DISCOVERED BY APPLICATION OF THE HAND.

The diagnostic indications derived from *thoracic fremitus* or *vibration*, depend upon modified states of the phenomenon as produced by speaking (*vocal*) and by coughing (*tussive*,) and also upon its occurrence under circumstances which do not give rise to it in health. Of the latter kind are the vibrations produced by the bubbling of air through fluids in the lung (*rhonchal*); by the collision and rubbing together of plastic matter exuded on the pleural surfaces; and lastly, by pulsation of the substance of the lung. The fluctuation of fluids contained either in the pleura or lungs is sometimes distinctly perceptible by the hand applied to the surface. The sensation is that of ordinary fluctuation, attended (not always) with a certain degree of vibratile tremour.

MENSURATION.

The object of measuring is to ascertain the comparative bulk and volume of the two sides, the relative position of their different parts, and in some few instances, the distance between those parts and certain fixed points beyond the limits of the thorax—also to ascertain the amount of expansion and retraction of the chest accompanying inspiration and expiration. Mensuration may be either general or partial:—

A. GENERAL.

a. Circular	1. *Opposite ensiform* process. 2. Midway between nipples and clavicle.
b. Transverse	3. From point of one acromion to that of the other. 4. In axillæ. 5. At base of chest.
c. Antero-posterior	6. Under the clavicles. 7. At base of chest.
d. Vertical	8. *From clavicle to most dependent point of ribs.*

The morbid conditions to be ascertained by circular measurement are *increase*, or *diminution of bulk* of either side as compared with the other, and defective expansion during inspiration.

B. PARTIAL MEASUREMENTS.

A. *Horizontal.—From nipple to middle line of the sternum* B. *Vertical.* —From nipple to middle point of clavicle.

PERCUSSION.

We now come to the next method of Physical Diagnosis, called Percussion; the immediate object of which process is the determination of the density of subjacent parts. When applied to the chest, it serves to establish any increase or diminution of the quantity of air naturally contained within that cavity. The amount of density is inferred—1st, from the nature of the *sound* elicited by percussion; 2d, from the elasticity or *degree of resistance*, of the body percussed. Respecting the value of changes in the elasticity, as affording diagnostic indications, our author makes some useful remarks. There are cases, he says, of not very rare occurrence in which erroneous inferences would almost inevitably be drawn from the sound elicited by percussion, were not these corrected by the information derived from the degree of resistance felt by the fingers. In illustration, he supposes the case of a cavity seated close to the surface: the unnatural clearness of sound which sometimes distinctly exists over such cavities, quite independently of an amphoric *character* in that sound, might not only lead to an incorrect estimate of the state of the subjacent part, but also to the inference that the lung in reality least affected was the most diseased. The sensation of hardness and firm resistance experienced by the fingers at once discloses the true cause of the unusual clearness.

The properties of the sound elicited by percussion, which vary with the density of the part percussed, and consequently possess practical importance, are: 1. The degree of clearness. 2. Its duration. 3. Its special character. With respect to "clearness," and its opposite "dulness," they are readily illustrated by percussing the antero-superior part of the chest and the thigh; the sounds elicited, the former *clear*, the latter

dull, may be used as terms of comparison for the greater number of sounds producible in various parts of the chest.

2. *Duration.*—The duration of the sound varies distinctly in different parts of the chest, for instance, at the upper part of the sternum and over the heart. The greater the dulness, the shorter is the duration of sound. With respect to the "special character" of this sound, it is to be only learned by actual trial; description cannot convey it.

With respect to the method of employing percussion, our author gives the decided preference to *mediate* percussion, the distinctive character of which is, that some solid body, interposed between the chest and percussing fingers, receives the *direct* impulse of these: in its employment two things are to be considered—the material interposed, and the agent used for striking it. The material interposed, called a pleximeter, may be of various kinds; the chief are a thin, circular or oval plate of ivory—the left index finger—or a flat piece of India-rubber. Whatever be the pleximeter used, it should be placed in close and firm contact with the surface, and, in the act of percussing, the movement should spring from the wrist only, the fore-arm and arm being held perfectly motionless. The pain occasioned to the patient in many cases, and the uncertainty of the results obtained, depend in a great measure on the non-observance of this rule. The stroke also should be *quickly* and *lightly* given, the fingers being withdrawn, or at least all pressure removed, the moment their impulse has been effectually communicated to the surface struck. To this precept there is but one exception: in eliciting a particular modification of a special character of the sound (*cracked-metal character*,) the successful production of which depends materially on the manner of striking, it is advisable to give a slow and heavy blow, and allow the fingers to press forcibly on the part for some moments after it has been given.

The position of a patient undergoing percussion should, unless circumstances prevent it, be the sitting or standing. In this precept our author agrees with Laennec, but not for precisely the same reasons. Laennec objects to the lying position from the idea of the sound being diminished by the mattress, pillows and curtains: this objection will fall to the ground, if we only recollect that our object is to obtain comparative and not direct results.

The difficulty of placing the patient perfectly level in bed, together with the constrained position in which the physician is obliged to place himself in order to get at different parts of the chest, constitute a more solid objection.

Results of Percussion in the Natural State.

The special character of the sound elicited from a healthy thorax can only be taught by experience.

"The duration and clearness of the sound bear a definite relation to each other; whenever the former is considerable, the latter is proportionately marked, and *vice versâ*. And again, the clearness of the sound and the sense of resistance experienced by the fingers have a manifest connection: as the former increases, the latter decreases: with the increase of the latter, the former decreases. Thus the sound is clearer in the infra-clavicular region than in the scapular;

and so the sense of resistance is much less under the clavicle, than over the scapula."

There are some exceptions, however, to this relationship of the clearness of the sound and the resistance of the parietes: these exceptions, however, only prove the rule. Thus, in the internal division of the clavicular and sternal regions, the sound is clearer than in others, for example, in the infra-clavicular, where the resistance is less. This peculiarity manifestly depends on the nature of the wall of the thorax in the former situations; being there wholly composed of bone, it cannot give way and rebound under percussion to the amount which the slight density of the subjacent parts would otherwise ensure; while, on the other hand, its composition is favourable to frequency of vibration, and hence to clearness of sound.

The clearness of the sound, and, with this, its duration, together with the amount of resistance felt, varies in different parts of the healthy chest.

"A. *Anterior Regions*.—Taking the sound of the infra-clavicular regions, which is clear, and of proportional duration, as the standard, scarcely any perceptible change is perceived in examining from above downwards, till the lower part of the mammary region is reached. The change becomes still more decided in the infra-mammary regions; on the right, the sound grows considerably duller, and the resistance increases, from the presence of the liver; on the left, decrease of clearness and shortened duration are distinctly detected at the internal part of the mammary region, owing to the heart. In the internal part of the left infra-mammary region, the sound may be dull, but is more commonly clear; its special character being at the same time slightly, sometimes intensely, tympanitic, in consequence of an inflated state of the stomach. The external division of the same region, on the contrary, sometimes yields a dull sound, in consequence of the presence of the spleen. The clavicular region at the sternal extremity of the bone gives a clearer sound even than the infra-clavicular, but about the centre of the bone it becomes slightly duller, towards its humoral end considerably so. The sound obtained from the post-clavicular space is duller than that of the infra-clavicular region; even in thin persons this difference is very perceptible, though in them much less so than in fat subjects. In the upper sternal region the sound is as closely as possible the same as at the adjoining end of the clavicle. No change of consequence can be detected until we come to the inferior part of the lower sternal region; here the sound is usually dull, and may be extremely so, or, on the contrary, clear, and its special character tympanitic. The first and usual condition arises from the interference of the liver and heart; the second, from distention of the stomach with food; the third, from distention of the same viscus with gas."

After describing the variation in the clearness and duration of the sound in the different parts of the posterior and lateral regions of the chest, he next comes to the consideration of those variations in the sound of the chests of different individuals compatible with health. The sound yielded by the chest of different individuals varies in clearness; being, generally speaking, clear in proportion to the thinness of the walls. Thus it becomes distinctly clearer in persons who, from a previous state of fatness, become emaciated.

Again, the acts of inspiration and expiration modify the results of percussion in two different manners; 1, by altering the volume of the lungs; 2, by altering their density.

The following are the limits within which the pulmonary sound of percussion may be elicited. They are the same as those assigned by Dr. Williams in his work on the Chest.

"At the close of an ordinary expiration the lungs may be considered to extend on the right side as far down as the sixth rib in front, and the eighth laterally. On the left side, they reach to the seventh rib or thereabout in front, (except within two or three inches of the sternum, where they scarcely extend lower than the sixth, the heart lying in contact with the thoracic walls in that situation,) and as far as the eighth rib laterally. On both sides of the chest they extend somewhat further down posteriorly than elsewhere.

"During full inspiration the lungs extend downwards in all directions somewhat further than the limits just mentioned; probably their inferior edge is then an intercostal space and a half lower than after ordinary expiration, and proportionally still lower when the lungs have been forcibly emptied of their air. At the same time the space on the left of the sternum, where, after expiration, the heart is in contact with the walls, becomes filled with lung."

Hence it is evident that the extent of surface from which the sound of percussion can be elicited, will depend on the precise moment of the respiratory act at which the examination is made.

Again, it is plain that the clearness of the sound will vary according as percussion is performed at the close of inspiration or of expiration. Hence it becomes necessary, under all circumstances, that the act of respiration be at the same stage of progress when the two sides of the chest are percussed comparatively; and the end of a full inspiration is the fittest moment for percussing.

In the state of health, change of the posture of the patient has little or no influence in modifying the relation of the lungs with respect to their containing walls; there is however one exception to this. When a person leans forward more of the heart's surface is brought in close proximity to the walls, than when he is recumbent; which will modify the limits of the pulmonary sound in the cardiac region.

Morbid States discovered by Percussion.

The changes detected by percussion may be enumerated as follow:—

1. *Diminution of Clearness*, gradually passing to perfect dulness, accompanied by shortened duration of sound, and increased sense of resistance.
2. Increase of clearness and of duration, with decrease of resistance.
3. Increase of clearness and of duration, with increase of resistance.
4. Alterations of special character.

With respect to the last class, or, as our author has it, the special characters, he denominates them—1. *Wooden*; 2. *Tympanitic*; 3. *Tubular*; 4. *Amphoric*; 5. *Cracked-metal*. For a description of these we beg to refer to the work itself.

When there is diminished clearness of sound, the limits within which it is detected may be *fixed* or *changeable*, the former is much the more common case, change in the posture of the patient not producing any change in the line of demarkation of the healthily and morbidly sound parts. Under certain very rare circumstances, however, the line of demarkation may be altered by making the patient change his posture; fluid in the pleura, especially if associated with air, is the only morbid state the

percussion signs of which are ever thus characterised, the fluid gravitating to whatever part of the patient's chest his change of position renders the most dependent.

We now come to the subject of *Auscultation*, which may be *immediate* or *mediate*; in the former case the ear is applied directly to the chest; in the second, a hollow cylinder of wood is used as a conducting medium between the surface examined and the ear; to this the name of stethoscope has been given. Both these methods of auscultation have had their abettors and opponents. The author's opinions on the subject are very rational: he conceives that that method is to be preferred to which the observer is most habituated; and also that because cases may occur in which the ear cannot be directly applied, or in which it may be disgusting or indelicate to do so, mediate auscultation is the method with which the student should most assiduously familiarise himself; still in every instance the ear should be practised in immediate auscultation also. Among the precautions necessary to be observed in practising auscultation, he mentions that it is of importance to apply the stethoscope firmly but not forcibly to the surface, as too slight or too strong pressure interferes with the accurate transmissions, or alters the character of the sound; too slight pressure of the ear on the stethoscope is considered by some to impart somewhat of an œgophonic character to a natural resonance.

The sounds discoverable by auscultation are, A 1. The natural respiratory murmurs; 2. Certain modified conditions of these; 3. Sounds termed *rhonchi*, which occasionally supersede them; 4. Phenomena altogether adventitious, (being produced in a situation where sound is not evolved at all in the natural state of things,) but still depending on the act of respiration.

B. The resonance of the *voice*.

C. The resonance of the *cough*.

D. Phenomena common to the sounds of respiration, of the voice and of the cough.

E. The sounds of the *heart* and *vascular murmurs*, as transmitted through the tissue of the lungs.

A, 1. Each act of healthy respiration is attended by two sounds, one corresponding to the movement of inspiration, the other to that of expiration. These are the *inspiratory* and *expiratory sounds*.

The essential properties of those murmurs, those which in their modified states especially possess diagnostic value, are thus:—1. *Special Character*; 2. *Intensity*; 3. *Duration*; 4. *Liquidness*; 5. *Softness*; 6. *Rhythm*.

"By the *special character* of a sound is understood," says our author, "that essential peculiarity which must, under all circumstances of intensity, duration, rhythm, &c., distinguish it from others; the special character of the sounds of a piano-forte, for example, will invariably differ from that of the tones of a violin. Here also may be included that property of sound known as its '*quality*.' The terms *intensity* and *duration* explain themselves. The notions of *dryness* and *liquidness* of sound may be at once obtained by squeezing close to the ear first a perfectly dry, and then a moistened sponge. Similarly, if we press together a mass of wool held beside the ear, the property of *softness* in sound will at once become intelligible; its converse, *hardness*, by grating together any

two hard bodies. The *rhythm* of a sound means its mode of progression or evolution, which may be continuous and equable, or interrupted and jerking."

Our author cautions the student against confounding this signification of the term *rhythm*, as applied to a *single* sound, with its more common meaning in medical language when referring to the regularity and mode of succession of two or more distinct and separate sounds, as for example, of the two respiratory murmurs.

Every sound detected by auscultation should be analyzed with respect to these various properties.

There is a difference in the nature and properties of the murmurs, depending on the various divisions of the respiratory organs from which the sounds audible externally are transmitted: in this respect they are called, A. *pulmonary* or *vesicular*; B. *bronchial*; C. *tracheal*; D. *laryngeal*; E. *pharyngeal*. These agree in this particular—that in all of them the audible sound may be resolved into two—an inspiratory and expiratory.

A. *Pulmonary or Vesicular Respiration, (as originally employed by Laennec.)*

The term pulmonary has been replaced by the term *vesicular*, which was employed originally to designate the *seat* of these sounds; some however have incorrectly referred the term vesicular to the *character* of the sound. There is nothing however, as our author observes, in the nature of the respiratory murmurs suggestive of a connection with vesicles, and whenever such character occurs the phenomenon it attends is morbid.

"The *inspiratory* murmur is a sound of gentle breezy character, neither liquid nor dry; soft, of a certain intensity and duration, and in respect of rhythm, gradually developed and continuous.

"The *expiratory* murmur possesses identically the same properties as the inspiratory, except in respect of intensity and duration. It is about three or four times less intense and shorter than the latter sound."

We recollect that Fournet expresses the ratio of the inspiratory to the expiratory murmurs by 5.1, in respect of intensity and duration; which ratio that gentleman considers to be the same in all subjects. Our author disagrees with M. Fournet in that particular; he considers that the excess of intensity and of duration is always on the side of inspiration, and this to a considerable amount.

The continuousness of the inspiratory and expiratory murmur, it should be observed, is an important character of the *healthy* pulmonary respiration.

There are certain variations of the respiratory murmurs which may exist within certain limits in the state of health; that is, there are healthy varieties of respiration. These may be referred to age; the part of the chest examined; the rapidity and fulness of respiration; temperament and idiosyncracy.

After considering the *natural* or *healthy* murmurs in the different sections of the respiratory organs, our author now comes to describe them in their *unnatural* or *unhealthy* states.

A. 2. *Modified Conditions of the Respiratory Murmurs.*

Pulmonary **or** ***Vesicular.*** It is very rare to find one only of the primary

properties of the respiratory sounds affected; generally speaking two or more of them suffer alteration at the same time; and thus are produced compound conditions of change, or distinct species, which may be classed as follow:—

Species of unhealthy respiration, distinguished by changes of

1. *Duration and Intensity.*
   - *a.* Exaggerated respiration.
   - *b.* Weak respiration.
   - *c.* Suppressed respiration.

2. *Rhythm* solely, or with other properties.
   - *d.* Incomplete respiration.
   - *e.* Jerking.
   - *f.* Divided.

3. *Character*, with other properties.
   - *g.* Harsh respiration.
   - *h.* Bronchial.
   - *i.* Blowing.
     1. Diffused.
     2. Tubular.
     3. Cavernous.
     4. Amphoric.

The *jerking respiration* is thus explained. "When the movement of inspiration, instead of being accompanied by a murmur continuous from the outset to the close (which may be thus represented .....) is attended with a sound of an interrupted character, divided into several unequal parts thus (..... | .. | ... | ....&c.) the respiration may be called *jerking*. The expiratory sound does not possess this peculiarity but is generally somewhat increased in duration, while the inspiratory is certainly somewhat decreased in this respect." f. *Divided respiration* is said to exist when the inspiratory and expiratory murmurs, instead of succeeding each other so closely, as to be in a manner continuous, are separated by a distinct interval.

A, 3. *Sounds superseding the Respiratory Murmurs: Rhonchi.*

"*Rhonchus* is an unnatural sound audible in inspiration or in expiration, or in both; of dry or humid character; masking the natural murmurs more or less completely; persistent or interrupted; originating in the minute or the larger bronchi, in excavations of the pulmonary substance, or (probably) in the tissue of the lung itself; and produced either by the passage of air along bronchi of altered caliber, by air bubbling through fluid contained in those tubes, or (probably) in certain conditions of the pulmonary substance by motions of that substance on itself."

With respect to the seat of the rhonchus being in the tissue of the lung itself, our author here alludes to the crepitant rhonchus, the mechanism of which is still undecided. Two points require investigation with respect to this matter: *a.* The intimate seat of production of the rhonchus; *b.* The physical condition of that seat at the moment of production. According to some, the cavities of the pulmonary cells are the cause of the rhonchus; because (says Andral) the rhonchus is evidently a diminution

of the finer mucous bubbling rhonchus, which is confessedly produced in the smaller bronchi. This is an obvious begging of the question, as our author well observes, the difficulty being to ascertain whether the rhonchus is a diminutive of the mucous. The same view of the seat of this rhonchus is entertained by other writers, and supported by plausible, though certainly not unanswerable, arguments.

The following arrangement of rhonchi, founded on their amount of liquidness and their special character, appears to our author the most practically useful.

Degree of Liquidness.		*Special Character.*	
A. *Dry.*	*a.* Of shrill tone.	1. Sibilant.	Whistling. / Clicking.
	b. Of grave tone.	2. Sonorous.	Snoring. / Rubbing. / Cooing.
	c. Of tone rather shrill than grave.	3. Dry Crackling.	
B. *Humid.*	4. Crepitant.	*a.* Primitive. / *b.* Redux.	
	5. Subcrepitant.	*a.* True Subcrepitant. / *b.* Humid. / *c.* Continuous.	
	6. Humid Crackling.		
	7. Mucous, Submucous.		
	8. Cavernous, Cavernulous.		
Of Doubtful Nature.	"Pulmonary crumpling sound." Dry crepitant with large bubbles.		

For a minute account of these varieties we must refer to the author himself.

A. *Phenomena altogether adventitious, being produced in a situation where sound is not evolved at all in the natural state of things.*

The phenomena alluded to here are the various friction-sounds produced by the movement of the opposite laminæ of the pleuræ on each other in a state of disease.

The modifications of intensity and special character of friction-sound justify the establishment of four varieties; *a*, the *grazing*; *b*, *rubbing*; *c*, *grating*; *d*, *creaking*.

Modified Conditions of the Respiratory Murmurs in the Trachea and Larynx.

These serve as useful auxiliaries in the diagnosis of many cases of laryngeal disease, especially when compared with the results of bronchial and pulmonary auscultation; without such comparison it is very difficult sometimes to say whether a given rhonchus is actually produced in the larynx or transmitted from the bronchi.

The chief morbid phenomena occurring in the larynx are—

Harsh respiration.
Sibilant, Sonorous, Valvular, Gurgling, Flapping } Rhonchi.

B. *The Resonance of the Voice.*—In auscultation of the voice it is important that its intensity and tone be precisely the same while both sides of the chest are examined; and in order to ensure this uniformity, the observer may cause the patient to count a certain number of figures at a measured and even rate. In general a loud tone should at the same time be directed. The stethoscope should be laid firmly upon the surface, and the ear applied to the instrument, but without any degree of forcible pressure; if either be too lightly applied, a tremulous bleating character may be given to the resonance, if too forcibly, the distinctness of this is diminished.

The condition known as exaggerated resonance, or diffused bronchophony is probably more accurately appreciable by means of immediate than mediate auscultation: all other unnatural states of vocal resonance are more satisfactorily and distinctly ascertained with the stethoscope.

The amount and special character of the natural resonance are modified by certain circumstances altogether independent of disease. The chief of these, and the modes of modification they produce, are as follow:

1. The natural resonance is *cæteris paribus* marked in proportion to the graveness of the voice. This statement is only true of intensity, however; there is no greater tendency to concentration or articulation of the sound when the voice is grave than when it is shrill.

2. The natural resonance of the voice is, as a corollary from the last proposition, more marked in males and in adults than in females and in children.

3. The special character of the resonance varies with the quality of the speaking voice.

4. The natural resonance is more strongly developed the larger the chest, and the less loaded its walls with fat and muscle.

5. It is stronger in front than behind (with the exception of the interscapular region) and at the upper than the lower parts of the thorax.

6. It is equal on both sides of the chest, except under the clavicles, and in the spaces between the spines of the scapulæ and median line: in these regions the phenomenon is more strongly marked on the right side.

It may be well to observe here, that it is M. Louis's opinion, with which our author coincides, that in the space corresponding posteriorly to the origin of the right bronchus, the voice resounds more strongly than in the same part on the left side. The natural resonance also is more intense under the right than the left clavicle. The application of this fact to the diagnosis of early tuberculisation is of considerable value.

Unnatural or Morbid Vocal Resonance.—The modifications of natural resonance which arise in disease may be classed as follow:—

Vocal Resonance.

Diminished in intensity.	1. Weak resonance. 2. Suppressed resonance.
Increased in intensity.	3. Exaggerated resonance. 4. Bronchophony.
Increased in intensity and altered in special character.	5. Œgophony. 6. Pectoriloquy. 7. Amphoric resonance.

Laennec's varieties of pectoriloquy, viz. perfect, imperfect and doubtful, our author considers inadmissible, and they are referrible to bronchophony. He conceives his error to have arisen from assuming that pectoriloquy must always exist when excavation is present. So that whatever resonance he met in connection with a cavity, he styled pectoriloquy.

In certain cases pectoriloquy has a tremulous, and so acquires some slight degree of œgophonic character. This is occasioned, according to MM. Barth and Roger, when the cavity affording it, has a flattened form, and is provided with walls capable of moving backwards and forwards under the influence of vibration.

Tussive Resonance.—The cough of healthy subjects, when ausculted on the surface of the chest, furnishes a quick, short, commonly dull and indistinct, somewhat diffused sound, without hollow or tubular character, but attended with a distinct sensation of succussion of the interior of the thorax.

The *modified states* of the pulmonary cough, which occur in disease, are the *Bronchial*, *Cavernous* and *Amphoric.*

Metallic Tinkling.—This phenomenon, observes our author, occurring in connection with respiration, co-exists commonly with inspiration, being prolonged somewhat into the expiration following, and is very rarely limited to the latter. M. Fournet, however, places it among the phenomena co-existing with both inspiration and expiration, but especially with expiration.

Sounds of the Heart and Vascular Murmurs transmitted through the Substance of the Lungs.

In subjects having all their thoracic organs healthy, and those affected with *cardiac* (without pulmonary) disease, the intensity of the heart's sounds will be directly as the distance of the point at which they are examined from their centre of production. On the other hand, in cases where the heart is healthy, but the lungs diseased, this regular order of propagation is liable to alter, in consequence of change in the conducting power of the media intervening between that organ and the surface where auscultation is performed. The positive intensity of sound produced in the heart is unaltered, but its relative intensity, as discovered at different parts of the thoracic surface, is changed. Upon this fact are founded indirectly some inferences bearing upon the diagnosis of affections of the lungs and pleura. This source of diagnosis has as yet been applied in the investigation of but few diseases: the signs furnished by it are—*increased*

intensity of transmission of heart's sounds. Diminished intensity of transmission of heart's sounds.

DETERMINATION OF THE SITUATION OF SURROUNDING PARTS AND ORGANS.

The object of attempting to determine the situation of other parts than the lungs themselves, when the diseases of these organs are the subject of investigation, is, as might be anticipated, to infer from any change in that situation, the existence of some pulmonary affection capable of producing it. The organs and parts liable to undergo displacement in consequence of pulmonary disease are—1. The heart; 2. The mediastinum; 3. The diaphragm; 4. The liver; 5. The spleen; 6. The stomach.

The existence of displacement of these organs is determined by inspection, by application of the hand, by percussion, and by auscultation.

The modes of displacement from its natural situation are—

a. Lateral detrusion. { to the right side. / to the left side.
b. Elevation.
c. Procidentia.

Part II. of this work consists of a Table exhibiting the physical cause and ordinary seat of the different physical signs, together with the names of the diseases in which they are observed. We shall extract a few examples by way of illustrating the nature and uses of this excellent Table.

SIGNS DISCOVERED BY INSPECTION.

Name of Sign.	*Physical Cause of Sign.*	*Ordinary Seat of the Sign.*	*Diseases in which it is observed.*
EXPANSION.	Gradual and general detrusion of the walls of the chest, by a force acting from within outwards—the elasticity of the lung having been first destroyed.	The left side of the thorax; because its most usual cause (pleuritic effusion) is most common on that side.	Pleuritic effusion. Pleuro-pneumonia. Hydrothorax (rare) Cancer of the pleura or lung. Hæmothorax. Pneumonia.
BULGING.	The same cause acting locally.	At either base: oftenest the left. Infra-clavicular region. Post-clavicular. Anterior surface, generally. Mammary and central sternal region.	Gravitating pleuritic effusion. Pleuro-pneumonia. Cancer of the pleura or lung. Hypertrophous emphysema.

SIGNS DISCOVERED BY APPLICATION OF HAND.

of Sign.	*Physical Cause of the Sign.*	*Ordinary Seat of the Sign.*	*Diseases in which it is observed.*
ıed vocal ıussive ıtion.	Unnatural density of the pulmonary substance between the bronchi and the part examined.	Infra-clavicular and latero-inferior regions.	Tubercles. Pneumonia. Dilatation of bronchi. Chronic consolidation of the lung. Pulmonary apoplexy. Pulmonary œdema.
g vibra-	Walls of chest set in vibration by friction of pleural false membrane.	Latero-inferior part of chest.	Pleurisy, periods of: Plastic exudation. Absorption, with or without Retraction.

SIGNS DISCOVERED BY MENSURATION.

(CIRCULAR)

of Sign	*Physical Cause of Sign.*	*Ordinary Seat of Sign.*	*Diseases in which it is observed.*
ıed bulk ther side.	Gradual detrusion of the walls of the chest by a force acting from within outwards. the elasticity of the lung being first destroyed by pressure.	The left side of the thorax.	Pleurisy, (period of effusion with dilatation.) Hydropneumothorax. Pneumo-thorax. Cancerous tumour of the lung or pleura.
ıhed bulk ther side.	Long continued pressure having reduced the lung to a very small size, the pleuritic fluid is removed by absorption; the lung being unable to recover its previous bulk, the ches yields inwards under atmospheric pressure.	The left side of the thorax.	Pleurisy, period of absorption with retraction.

We shall now take a few extracts from that division of the Second Part of this work which constitutes a SYNOPSIS OF THE PHYSICAL SIGNS OF DISEASES OF THE LUNGS.

ACUTE PNEUMONIA.

FIRST STAGE—ENGORGEMENT.

Inspection.—Diminution of motions of expansion and elevation (if severe pain be present.)

Percussion.—*Sound less clear than natural, resistance slightly increased.*

Auscultation.—*Respiratory murmurs weak, suppressed or masked by rhonchus in the affected parts; exaggerated in those at some distance from it and in the opposite lung; true crepitant rhonchus; vocal resonance somewhat increased;* some degree of bronchial cough.

SECOND STAGE.—RED HEPATIZATION.

Inspection.—Expansion of the affected side. Bulging of the infra-clavicular sub-region in pneumonia of the upper lobe; diminution of the motions of expansion and elevation; motion of expansion diminished in proportion to that of elevation.

Application of the Hand.—*Increased vocal and tussive vibration;* pulsatile vibration.

Mensuration.—Increase in the semicircular measurement of the side; deficient increase in semicircular width in inspiration.

Percussion.—*Sound diminished in clearness, until completely dull, decreased in duration, sense of resistance very much increased;* under certain circumstances of locality of the inflammation character of the sound tubular.

Auscultation.—*Respiration bronchial, or blowing, of either the diffused or tubular varieties;* weak in the immediate vicinity of the inflamed part; *exaggerated in more distant parts, and in opposite lung; bronchophony,* or (under certain circumstances) *broncho-ægophony;* bronchial cough; intensity of transmission of heart's sounds increased.

THIRD STAGE.—GREY HEPATIZATION, OR INTERSTITIAL SUPPURATION.

The signs the same as the preceding one; facts observed of late years tend to render it probable that the occurrence of a peculiar form of mucous rhonchus, in addition to the signs of the second, may announce the supervention of the third stage.

STAGE OF RESOLUTION.

Inspection.—Retraction or depression of the affected side.

Mensuration —Diminution of semicircular width.

Percussion.—*Dulness of sound less marked than previously, and gradually decreasing.*

Auscultation.—*Respiratory murmurs weak and harsh; redux crepitant,* or subcrepitant rhonchus; still some bronchophony, gradually disappearing.

PLEURISY.

a. DRY PERIOD.

Inspection—Diminished motions of expansion and elevation; jerking rhythm of these motions, *partial motions also slightly lessened in amount.*

Percussion.—Clearness of sound not perceptibly diminished.

Auscultation.—Intermittent weak respiration; occasionally, but rarely, grazing variety of friction-sound.

b. PERIOD OF PLASTIC EXUDATION.

Inspection.—Signs same as before.

Application of the Hand.—Rubbing vibration occasionally to be felt.

Percussion.—Clearness and duration of sound somewhat diminished; *if notably so, and the sensation of resistance very slightly but distinctly increased, the plastic matter is abundant;* deep respiration will restore, in a great degree, the natural clearness of sound.

Auscultation.—Intermittent weak respiration; rubbing or even grating variety of friction sound.

c. PERIOD OF EFFUSION.

c, 1. *Of Laminar Effusion.*

Inspection.—Signs usually as in the previous periods, but sometimes the partial and general motions become freer, and cease to be jerking in consequence of decrease of pain.

Application of the Hand.—Diminution of vocal and tussive vibration, rubbing vibration, if before perceptible, ceases to be felt.

Percussion.—Sound diminished in clearness and in duration; sense of resistance increased: these changes exist to an equal amount all over the chest, and are not influenced by any change of posture of the patient.

Auscultation.—Deep-seated persistent weak respiration, *with harsh or slight bronchial character;* friction-sound ceases commonly to be audible; vocal resonance louder than natural, and generally having some œgophonic character,—this unnatural resonance being diffused, though commonly most marked towards the angle of the scapula.

c, 2. *Of Gravitating Effusion.*

Inspection.—Motions of expansion and elevation, and costal motions much diminished, especially at the lower parts of the chest.

Application of the Hand.—Vocal and tussive vibration abolished at the inferior parts of the chest; *rubbing vibration not perceptible.*

Mensuration.—Defective expansion of the chest in inspiration.

Percussion.—The upper part of the chest is found to have recovered, in some degree, its natural sound: the sound of the lower is completely dull and proportionally short, the sense of resistance here extremely marked; the limits of the dull and clearer-sounding parts are distinguished by a tolerably well-defined line; the limits of the dull sound commonly change with the position of the patient; *deep inspiration has no influence on the limits or degree of the dull sound.*

Auscultation.—Respiratory murmur suppressed where effusion most abundant; weak where less so; *in some comparatively rare cases, however,* the respiration is distinctly audible, and of the diffused blowing type in the parts directly corresponding to the effusion; above the effusion they are exaggerated, harsh, or bronchial, friction-sound almost always inaudible, sometimes, however, may be slightly detected towards the upper edge of the effusion, where also œgophony *is heard, especially towards the angle of the scapula;* œgophony may be absent or replaced by bronchophony.

c, 3. *Effusion with Dilatation and Detrusion.*

Inspection.—Affected side expanded; intercostal spaces widened, flat or even convex; motions of expansion almost completely abolished; *lower part of chest slowly dragged upwards, a motion which seems to take place later than on the*

other side; costal motions abolished; *fluctuation visible in rare cases of considerable bulging of the intercostal spaces.*

Application of the Hand.—Surface felt to be unnaturally smooth and even; vocal and tussive vibration not to be detected; *simple fluctuation producible in cases of bulging of the intercostal spaces; peripheric fluctuation.*

Mensuration.—Increase of semicircular measurement of the side; deficient enlargement of side during inspiration; antero-posterior diameter increased; vertical measurement also increased; *distance between the nipple and median line greater than on the opposite side.*

Percussion—Sound completely dull, and of short duration where the fluid exists; resistance extremely marked; *the limits of the dull sound not altered by changing the position of the patient.*

Auscultation.—Respiratory murmurs totally suppressed, except close to the spine and under the clavicle, here harsh, bronchial, or even slightly blowing, sometimes more extensively audible of the latter type; *friction-sound inaudible: œgophony or other vocal resonance ceases commonly to be perceptible.*

Situation of Surrounding Parts.—Heart and mediastinum detruded to the opposite side; this corresponding division of the diaphragm depressed with the subjacent abdominal viscera.

d. PERIOD OF ABSORPTION.

d, 1. *Without Retraction of the Chest.*

Inspection.—The appearances of enlargement and bulging gradually disappear, and with them the obstracted state of the general and partial motions; *fluctuation ceases to be visible.*

Application of the Hand.—Natural intercostal depressions again felt, *increased by emaciation; rubbing vibration sometimes re-appears, as also,* vocal and tussive vibration.

Mensuration—The semicircular and vertical measurements fall to the natural standards; *the distance between the nipple and median line decreases gradually to the natural amount.*

Percussion.—Sound gradually recovers its natural clearness and duration, first at the upper then at the lower parts, at the latter *it may* long retain some degree of dulness; the sensation of resistance alters in the same way.

Auscultation.—Respiratory murmurs gradually restored, but *remains for a variable time weak* and slightly harsh; friction-sounds sometimes re-appear and continue audible for an indefinite period; œgophony or bronchophony (redux) reappear.

Situation of the Surrounding Parts.—Heart, mediastinum, vault of the diaphragm, and subjacent abdominal viscera restored to their natural position.

d, 2. *With Retraction of the Chest.*

Inspection.—Retraction, or more commonly depression; procidentia of the shoulder, of the ribs, and of the nipple; scapula tilted outwards, at its inferior angle; *distortion of the ribs;* intercostal spaces unnaturally narrow; diminished motions of expansion and of elevation, especially of the former; while the latter is affected in the same manner as during the period of effusion with dilatation; motions of ribs on each other much impaired.

Mensuration.—Semicircular measurement diminished; antero-posterior diameter diminished; distance between the nipple and the middle line diminished.

Percussion.—Sound dull and of short duration, with marked resistance under the finger at lower parts; superiorly it is clearer, in the inferior regions it has a wooden character, and, at the antero-superior, often a tubular one.

Auscultation—Respiratory murmurs suppressed at base, at upper parts weak and harsh, or bronchial; friction-sounds commonly audible, of rubbing, grating, or creaking type; bronchophony and bronchial cough, especially posteriorly.

Situation of Surrounding Parts.—The vault of the diaphragm and subjacent viscera are sometimes drawn above their natural level; mediastinum and heart commonly, but not always, restored to their natural positions.

We here close our analysis of this valuable little manual, not, however, without recommending it earnestly to the careful perusal of every medical student, who would wish to make himself acquainted with all the modern improvements in thoracic semeiology.

FOOD AND ITS INFLUENCE ON HEALTH AND DISEASE. By *Matthew Truman*, M.D. 8vo. London: Murray. 1842. pp. 231.

THIS book, as is stated in the Preface, is intended more for the general reader than the medical practitioner; and it is accordingly no more than a cursory view of the extensive subject of which it treats, written in a popular style. The author, after a short introduction defining the nature of food generally and enumerating its proximate principles, proceeds to describe succinctly each of the different articles of diet belonging to the animal and vegetable kingdoms. This part of the work displays some research; as not only all the ordinary (and extraordinary) materials of nourishment made use of in our own part of the world are mentioned, but also those adopted by the inhabitants of most other regions of the globe; though it cannot be said to add much to our previous stock of knowledge on the subject. In the progress of it, however, many judicious remarks are made. For instance, in treating of milk, Dr. Truman says,—

"The care that Nature has taken to provide for the young of animals this delightful aliment, which possesses such valuable properties, that alone it is capable of affording them sufficient nourishment, during the period of their existence in which they are most helpless, ought to act upon us as a powerful incentive to ensure that the young of our own species should never be deprived of this, to them, invaluable treasure; and further, that they should always derive it, if possible, from the source which Nature intended them to procure it from. The physiologist cannot own without regret, how very commonly ladies in affluent circumstances neglect that most important of their maternal duties—the nursing of their own children. Weakness of constitution is generally pleaded as the reason for this dereliction; but the real cause is to be found in the disinclination of the gay mother to renounce the frivolities of fashionable life. Females, in general, are not aware how likely they are to injure their own health, as well as that of their infants, by refusing to subject themselves to the trouble of nursing. Hundreds might have escaped the agonies of cancer, and of many other equally serious constitutional disorders, if they had only practiced the self-denial necessary for suckling their own children. * * * * An eloquent modern writer, in speaking on this subject, observes, that if he possessed a city, he would have a statue of a mother suckling her infant placed in the centre of it, as the emblem of domestic happiness!" 31-37.

But besides what ought to be had for food, Dr. Truman often gives us a dissertation on what ought not; and the worthy author would seem to gloat over the fact almost with the relish of a connoisseur when, at p. 43, he tells us—

"Human flesh is said to have the flavour of pork, and to be as tender as veal."

Nay,—(for it must be a bad cause indeed, in defence of which nothing can be urged) even if we were disposed to indulge in such tit-bits, we could, according to our author's own showing, excuse ourselves as only following in the wake of some of our revered ancestors and treading in their steps,—

"St. Jerome says that some of the inhabitants of Britain were cannibals; and in the reign of Henry I., the Scots are stated to have killed and eaten some English, at Galloway." 44.

But let those whose "bowels yearn over us" not promise themselves too much. Whatever changes in diet we may inculcate we shall be particularly anxious not to encourage a public leaning *too strongly* towards *ourselves*, for fear of sharing the fate of our medical brethren in Egypt in the thirteenth century. At that period, we are told,—

"All sorts of stratagems were had recourse to for the purpose of entrapping people, *to which physicians were particularly exposed*; for persons pretending to be sick, sent for them under pretence of asking their advice, but really with the object of killing and eating them."

This is "cupboard-love" with a vengeance!

We hardly expect, however, that the public taste, fickle and capricious as it notoriously is, will ever return to these lengths, nor even to the diet of "the golden days of good Queen Bess"—

> When ladies fair with ruffs tied round about their necks fast,
> Would gobble up a pound of beefsteaks for their breaks-fast.

But we have, at the same time, no desire to verge so far from this last solid satisfying and *ration* al kind of food as to practice living on the bark-bread of the Norwegian and Lapland peasants,—the ligneous fibres of the pine, beech, birch, elm, lime and poplar, which when ground, dried and sifted so as to form an impalpable powder, have been "found to afford much nourishment;"—or to be obliged to avail ourselves of,

"the experiments of Autenrieth of Tubingen, and others, for making bread of sawdust mixed with a small portion of flour, which, as Herschel has remarked, deserve a higher degree of celebrity than they have obtained, because they prove that absolute famine may be rendered next to impossible." 48.

Fancy has, no doubt, a powerful influence on the human mind. But Swift has shown that my Lord Peter was unable to make his brothers, Martin and John, fancy their dry crust part of a leg of mutton, notwithstanding that the *Pope's-eye* was staring them in the face. We have an impression that we should be equally difficult of persuasion as to the identity of clay with butter.

"The German workmen at the mountain of Kiffhôusen are stated to spread clay instead of butter on their bread: they call it stein-butter, and find it satisfies their hunger like other food, and is very easy of digestion. * * * * The inhabitants of Capua are related to have formerly paid a tribute to the Neapolitans for a kind of earth called leucogæum, which they made use of in the preparation of a dish named alica. The banks of the Mackenzie river, a few miles above the Bear Lake, contain layers of a kind of unctuous mud, which the Indians in that

neighbourhood eat occasionally during seasons of scarcity, and also take it even at other times for an amusement."

De gustibus non est disputandum.

Dr. Truman does not always confine himself to the relation of facts, but occasionally goes on to give their rationale. This he does in the instance last quoted. He satisfactorily shows that, under certain circumstances, clay may contain much available nutriment.

"All edible earths most likely contain portions of organic matter, which is the reason of their being taken as food. Such, at all events, has been found by Professor Retzius to be the case with the bergmehl, or flour of the mountain, at Degerfors, on the frontiers of Lapland * * * According to Retzius, it contains the remains of nineteen different forms of infusoria with siliceous carapaxes, several of which are similar to those belonging to some of the animalculæ met with in a living state near Berlin. The earth-worm swallows large quantities of moist earth, which always has minute particles of animal and vegetable substances mixed with it, and this small quantity of nutriment is sufficient for the subsistence of the creature. Many marine animals, echinodermata, fish, &c., seem to feed almost exclusively on sand, but then that sand abounds in fragments of shells, which have been reduced to powder by the rolling of the waves on the shore. All these facts show how parsimonious Nature appears to be of organic matter, since such great care is taken that none of it shall be wasted." 67.

After sections on spices and bitters, the author treats of salt. Here he says.

"Particular care should be taken to prevent childern eating their food without salt. * * * Almost all persons who abstain from it are troubled with worms." 75–6.

An adequate space is devoted to water and fermented liquors and their effect on the economy. Here occasionally some new facts or well-expressed ideas are elicited. Dr. Truman says.—

"The inhabitants of hot climates are generally supposed, though erroneously, to drink a greater quantity of water than those of cold ones. People living in the temperate parts of the earth certainly drink less than the residents of the tropics; but the inhabitants of the hyperborean regions consume a larger quantity of water than those of the hottest countries. Captain Lyon mentions that the Esquimaux drink water in enormous quantities; by gallons at a time, and two quarts at a draught." 84.

A knowledge of cookery is justly said to be "a kind of information which has more influence on the well-being of the human race than is generally imagined. The most important changes produced in the food by cookery are, the destruction of its vitality, an indispensable condition for its digestion; the coagulation of the albumen, and the liquefaction of the gelatine, osmazome, and adipose matter. These alterations, which render it more tender, sapid, and juicy, are mostly produced by exposure to a high temperature; and therefore, the observation made by Evenus, that fire is the best sauce in the world, is perfectly correct."

In speaking of cookery, Dr. Truman gives us many glimpses of the past, and recals to us that how much soever the moderns may boast of their Ude or their Jarrin, the fame of these heroes must grow pale before that of the *cuisiniers* of the Ancient Romans.

"Their cooks were to dexterous, they could serve up a pig or boar, broiled on one side, and roasted on the other. Another favourite way of dressing a

boar was that of stuffing it with thrushes, beccaficoes, &c. the whole being steeped in the choicest wines and the richest gravies." 102.

Some of their dishes, indeed, would hardly suit Guildhall on the 9th of November, or the Clarendon Hotel. For instance.—

"Sausages made of sow's liver, chopped up with fat and various herbs, accompanied with a sauce of milk, or dormice smeared with honey, and sprinkled with poppy juice, would probably, not be much relished at our dinners. The *altilia sumena*, considered a great delicacy, was composed of the gravid uterus of swine." 122.

Gustus elementa per omnia quærunt,

says Juvenal of the Romans, and assuredly

"The tocsin of the soul, the dinner bell,"

has by no means lost any of its magic power in the lapse of 1,800 years. The head cook at one of the West-end club-houses enjoyed, as we are told, at one time a salary of £1,500 a year—a larger stipend than that of any professor in our Universities! Cardinal de Retz wisely enough warned politicians to risk no motion in a popular assembly immediately before dinner—a text, on which the walls of St. Stephen's, if gifted with speech, might utter many a commentary.

The relative influence of animal and of vegetable diet on the human frame is ably exposed—still in a strictly popular manner—by our author; who afterwards shows, by a comparison of the inhabitants of Europe with the natives of many other regions of the globe, aided by an appeal to the anatomical character of the digestive organs in man—that a mixed diet is in all respects the best suited for the full development of the body. On this head he states:—

"Many persons consider that the human race has degenerated since the variety of our food has been no such increased. . . . . One trivial circumstance may be mentioned to prove the incorrectness of such an opinion. At the time of the tournament lately given by the Earl of Eglintoun at his seat in Scotland, when the old armour of so many departed Templars was brought out for the use of the knights who were to figure at that entertainment, many periodical publications teemed with paragraphs asserting that a great deal of padding and filling-up was necessary, to enable our young but degenerate aristocracy, (as they were called,) to keep on the corselets, arm-pieces, and sheaves, on account of the gigantic stature of the persons for whom they had originally been made. Mr. Pratt of Bond-street, who provided a large portion of this armour, states the very reverse to have been the case; that the reason, in almost every instance, the old armour had to be altered was, that it was too small instead of being too large. Most of the cuirasses and the coverings for the limbs were found to be so tight across the chest and round the arms and legs, that they could not be worn; and scarcely any of the helmets could be got on before they were enlarged: most satisfactorily proving that the higher orders of young man, in this country, possess a more perfect corporeal development than those of a similar class had six or seven hundred years ago." 140.

In the course of the work many other vulgar errors are combated. Thus, at page 63, "Sugar is supposed by many persons to be injurious to the teeth; but this is not the case, except when eaten in such excess as to

cause indigestion. It is antiseptic, and preserves vegetable and animal substances from putrefaction."

At page 107, "Many are of opinion that animal food is not rendered more digestible by being cooked. Cookery, however *does* render food easier of digestion,"—by the necessary destruction of its vitality.

A liberal allowance of nutriment is recommended in most cases by Dr. Truman, who cannot be called a "starving doctor." At page 162, he says,

"Dieticians often exclaim against the practice of giving children pies and puddings, which they consider are invariably unwholesome. This is a mistake: if a child is in a very robust state of health and can easily digest moderate quantities of those articles of diet, they are very proper for him, because they prevent his eating too much meat; and it is clear that whenever a very large quantity of food is taken, Nature intended that it should not be of too concentrated a description."

We do not agree in every notion with our author. Thus, at page 50 he says "Wheat (*triticum*) appears to have been first found in the valley of the Jordan, on the Mountains of Lebanon, and in the parts of Palestine and Syria near Arabia." If by this it be intended to imply that Judea is *exclusively* the native land of this member of the cerealia; we must protest that such an idea is purely hypothetical. The staff of life is doubtless first alluded to in Phœnicia, it being the country in which letters originated. But if we also may indulge in an hypothesis, it is that wheat (as well as the vine, see Genesis ix. 20) is a native of the country immediately South of the Caucasus, the focus of the great Caucasian race of mankind; and that it was brought into Palestine and Egypt with the southward march of population after the Deluge. And Dr. Truman himself tacitly admits this hypothesis, in saying, that the part of the world from which the Caucasian race has sprung, "is exactly that in which all the kinds of vegetable and animal food are indigenous which seem best fitted for effecting the development of the body. . . . . Allowing them (the Caucasians) to possess a superior natural organization, the probability must still be admitted, that they are also in a great measure indebted for their advancement before their fellow-men to their having had their origin in the region of the earth which naturally produces the most excellent kinds of nutritious matter."

A few useful rules for diet and the prevention of disease are laid down; and the terminating section is devoted to a popular view of the function of nutrition. On the whole, we have read the work with satisfaction. It is, as it professes to be, a book addressed to the public generally; and with laudable taste it is accordingly not overloaded with professional disquisitions; technical terms are also carefully eschewed throughout. No arbitrary dogmas find a place in its pages; and it has the great merit, (which many popular medical treatises cannot claim,) of being wholly free from the empiricism of recommending itself as an infallible guide in all cases—not only those in which disease prevails to a comparatively trifling extent, but those also which demand the vigilant attention of the physician.

A SYSTEM OF CLINICAL MEDICINE. By *Robert James Graves*, M. D. one of the Physicians to the Meath Hospital, Dublin: 8vo. pp. 938. Dublin and London, Jan. 1843.

THE brief title-page and the ample volume of important matters that follows it, present a remarkable contrast with the generality of publications that come before us, where the crowded first page promises every thing, and the atrophied or tumid body of the work performs nothing! The ample opportunities which Dr. Graves has had in the MEATH and Sir P. DUN'S Hospitals for clinical observation and *experiment*, as well as experience, have not been neglected; and the various detached essays and successive series of lectures which our author has published in the Dublin Hospital Reports, and in the pages of our contemporary, the MEDICAL GAZETTE, show the diligence, the ability, and the discrimination with which he has gleaned from the bed-side of sickness, and from midnight meditation, a vast mass of the most valuable clinical knowledge. All those reports and lectures have now been carefully revised—new matters added—and much expunged or condensed—so as to bring the whole within the compass of one volume—large indeed, and closely printed—but containing a library of practical medicine.

It is well known that the Dublin Schools, both medical and surgical, hold a very high rank among institutions of this kind, abroad and at home, and the professors have distinguished themselves, individually and collectively, in a very remarkable manner. The pages of this Journal bear ample testimony, for twenty years past, to the truth of this observation.

In the first introductory lecture of our author, he takes an opportunity of contrasting and comparing the modes of communicating clinical instruction in the hospitals of Edinburgh, London, Dublin, Paris, and Germany. They are all, more or less, deficient, but, upon the whole, he prefers the plan of our German brethren. As the surgical students concentrate all their attention on rare and terrible operations; so the medical students, in Great Britain especially, direct their chief observation to acute diseases, whose courses are well marked, and whose treatment is more simple than in chronic maladies. This applies, by the way, to the generality of young *practitioners*, as well as students. Yet, in their actual avocations, they will meet with fifty cases of chronic disease for one of acute. The Edinburgh CLINIQUE is fairly criticised. The clinical clerks take down the cases, which are read aloud at the bed-side by the physician, and then the interrogatories, remarks, and treatment are vociferated loudly, that the crowd of students may hear, though they cannot see the case.

"The chief objection to this mode of teaching is, that however well inclined the student may be, he is never obliged to exercise his own judgment in distinguishing diseases, and has no opportunity of trying his skill in their cure; and, consequently, at the end of his studies he is perhaps well grounded in the accessory sciences—is a perfect medical logician—able to arrange the names of diseases in their classes, orders, and different subdivisions; he may be master of the most difficult theories of modern physiologists; he may have heard, seen, and if a member of the Medical Society, he may have also talked a great deal;

but, at the end of all this preparation, what is he when he becomes a full doctor?—a practitioner who has never practised!" 5.

In France, the mode of conveying clinical instruction is very little different. There, however, no reports at the bed-side are dictated to the clerks, and more care is taken not to shock the feelings of the patients, by a full detail of the nature and consequences of their diseases. We now advert to the German Clinique.

"There is one clinical hospital for the treatment of acute diseases, and another for chronic diseases, while a clinical dispensary is devoted to the care of extern patients. The pupils are divided into two classes—the more advanced, who get the care of patients, and the junior students, who merely look on and listen. When a patient is admitted, his case is assigned to one of the practising pupils, who, when the physician is visiting the ward, reads out the notes he has taken of the patient's disease, including its origin, progress, and present state. This is done at the bed-side of the patient; and before he leaves the ward, the physician satisfies himself whether all the necessary particulars have been accurately reported by the pupil. After all the patients have thus been accurately examined, the professor and his class proceed to the lecture-room, and a list of the patients and the practising pupils is handed to the professor: the cases admitted that day are first inquired into, and the pupils are examined concerning the nature of their diseases, their probable termination, and the most appropriate method of treatment,—each student answering only concerning the patients entrusted to his special care. During this examination, the pupil's diagnosis and proposed remedies are submitted to the consideration of the professor, who corrects whatever appears to be erroneous in either, and then the student retires to write his prescriptions, while the rest of the cases and pupils undergo a similar examination. At the conclusion, the prescriptions written by the students are read out in order by the professor, who strictly comments on and corrects any inaccuracy or inelegance they may contain. When the prescriptions have been revised and corrected, they are signed by the physician, and handed to the apothecary to be made up and distributed." 9.

Few will deny the propriety or utility of this plan; but few will adopt it—such is the inveteracy of habit, and the power of prejudice! Dr. Graves, however, conquered both, and introduced the German system, though with great difficulty. Dr. Graves entertains fears, and not without reason, that the modern attention to the collateral sciences—chemistry, electricity, magnetism, microscopic investigation, &c., will draw off much of the student's attention from the main object—CLINICAL OBSERVATION.

In the third introductory lecture, Dr. Graves takes an opportunity of dissenting from some of the opinions of Liebig, (especially those respecting animal poisons and heat,) which are now "running the round of the journals," dazzling the optics of half the world—and almost eclipsing the "reflex-function" itself! In this attempt our author breaks a spear with Dr. Watson of the Middlesex.

It is not to be expected that we can give a review of a systematic work of this kind, occupying nearly a thousand pages:—we can only glance at some of the more prominent facts, doctrines, and opinions.

Fever, as might be supposed, stands first on Dr. Graves' list, and is ably handled—Ireland being one of the most feverish countries of Europe, whether we view it in a moral, political, or pathological condition. Pyrexia is never absent from the Emerald Isle. Ou author believes "typhus" to

be a disease of "essential" character, and contagious. Dr. G. expects little or nothing from the chemical researches into the state of the blood in fever. He has long abandoned all attempts at forming a *theory* of the disease, and "confines himself altogether to a diligent study of its symptoms." He is wise. He has taught, for twenty years, "that morbid anatomy has not served to reveal the cause of fever." Our readers are aware that we have advocated the same in this Journal for 25 years past. The treatment of fever we must pass entirely over. As Dr. G. has no theory, he can have no specific modus medendi. He is an eclectic—watching phenomena, and combating them as well as he can. We may also pass over the post-mortem appearances in fever, as they have been described a thousand times by Continental and British physicians—and, after all, lead but little to an elucidation of the nature of fever, or the best means of curing it. They are useful land-marks, however, to warn us of the rock on which the life of the patient may perish, if the disease be not carefully watched.

In the 20th lecture, our author draws our attention to the causes of catarrhal affections of the bronchial tubes—especially chronic bronchitis—a disease more frequently met with in dispensary, as well as private practice, than almost any other. Nor is it very easily cured, for its causes are perpetually recurring, particularly among the lower classes of society. The part affected in bronchial inflammation produces great difference in the danger and treatment. In the larynx, for instance, it is of far more importance than in the trache or bronchia. The following extract exhibits the practical tact of our author:

"You perceive, then, that if a patient catches cold, and gets an attack on the chest, it is of great importance to be able to ascertain what the situation and extent of the disease are, and whether the minute bronchial tubes are engaged or not. Now, how do you know this? Simply thus:—You first make a cursory examination of the whole chest, by applying the stethoscope over the superior, middle, and inferior portion of each lung, both before and behind; and, if you every where hear something, you conclude that the bronchitis is general, and not confined to any particular part. You next proceed to examine with greater attention these wheezing sounds; you apply the stethoscope, and if you find in each separate spot many sources of diseased sound—*if you hear a wheezing from a great many points close together*—you may be sure that the morbid sound proceeds from inflammation of the minute tubes. for the larger ones cannot exist in the small spots over which you apply the stethoscope, in such numbers as to give rise to so remarkable a plurality of sounds. Of this you may be certain, that when you find a great many sounds are audible over a small space, the minute bronchial ramifications are engaged.

It is the custom, with those who lecture on auscultation, to enumerate many sounds as connected with alterations in the condition of the bronchial tubes. We hear of the mucous, the sonorous, and the sibilant ronchus—their varieties and intermixtures. Now I know, by experience, that these names are very apt to confuse and perplex the young stethoscopist. There is no necessity for studying with great attention the definitions of these words, or the descriptions of the various sounds they are meant to represent: I am always anxious to avoid loading the memory of the student with names. With regard to the râles in bronchitis, all he need bear in mind is, that the nature of the sound produced by air passing through the bronchial tubes will be modified accordingly as these tubes are large or small, dry or moist, or as the moisture they contain is thin or

not. The two things of greatest importance in examining a case of bronchitis is to ascertain whether the minute bronchial ramifications are engaged, and, if the tubes contain any moisture, whether it is thin or viscid.

"I seldom, therefore, confused the student by telling him whether the râle is sibilant or sonorous, when asked about the nature of the sounds heard in a case of bronchial inflammation. All I say in reply is this: that the sounds are produced by the large or small bronchial tubes, and that they are either moist or dry." 228.

Dr. Graves gives a very able lecture on Hæmoptysis, its pathology and treatment. When a large quantity of blood is expectorated our author bleeds freely, and is not deterred by a depressed state of the vascular system. After venesection, he exhibits two grains of ipecacuhana every quarter of an hour, "until there is some improvement," and then every half-hour till the bleeding stops. He prefers this to acetate of lead; but does not reject the latter when combined with opium. Before any of these remedies are used, however, he prescribes acid saline aperients.

The 23d lecture on Phthisis, notwithstanding the hackneyed nature of the subject, will be perused with great advantage by many whose heads have grown grey in the practice of physic.

We must now make a long stride, in which "Gonorrhœa and Syphilis" occupies nearly one hundred pages, and all very ably handled. It is evident that Dr. Graves leans strongly to the non-mercurial treatment of syphilis; but he is not an "out-and-outer," as the following short quotation will testify.

"Notwithstanding all that has been said and done, a good deal still remains to be accomplished, before the treatment of syphilis can be said to be placed on a solid and rational basis. I am not among those who contend that you should never use mercury. On the contrary, I think there are cases in which you can employ it to great advantage—in fact, where its employment is indispensable. But I would have you always to act with caution. In treating cases of primary or secondary symptoms, which have existed for some time, and where the patient has been taking mercury, it is hard to unravel the perplexities which surround the case, and ascertain whether the mercury has been properly administered or not.

"Where a patient labouring under syphilis has been salivated without being improved, one of two things must be inferred—either that the mineral has had no effect on the disease, or that it has had an injurious effect on the constitution. The great point to arrive at in the treatment of syphilis, is to make the mercury act on the disease, and not on the constitution. This I have often endeavored to impress on my class. I will venture to say, that I would engage to give a patient labouring under primary symptoms any quantity of mercury, without producing a favourable effect on the disease, or doing him any good: I would engage to salivate a man affected with sore throat, and yet leave him as bad, or even worse than ever. I have witnessed this occurrence over and over again, and have laid it down to myself as a proposition,—that venereal may be treated with mercury, to the fullest extent, without being cured." 369.

We shall be able to allude to only one more lecture, No. 30, on Paralysis. There is a great deal more of original thought, reflection, and observation in these lectures than in any systematic work which we have, for a long time perused. Clinical lectures, from their semicolloquial character, and their constant reference to cases occurring in the wards of the hospital, are better adapted for the communication of original matter than the dry

systems or ex professo treatises which the student and practitioner are doomed to wade through. Our author seldom plumes himself on this much prized quality of originality—except in the lecture now under consideration, where he considers his views as perfectly original, as far as he is acquainted. He does not treat of common paraplegia, occasioned by wounds, bruises, or diseases of the spinal column, marrow, brain, or membranes; but of paralysis occasioned by inflammation, irritation, or other disease or disorder of some remote part, as the stomach, bowels, kidneys—or even of the sentient extremities of the nerves of the skin, and where there is no organic lesion of either of the great nervous centres, or of the trunks of nerves leading to the affected members. Dr. G. explains this sympathetic paralysis by the *reflex*-function, using the term which Dr. Hall has long employed, but never alluding to that ingenious physician's theory. Dr. Graves descanted on this subject in his lectures delivered in 1832, and published in the "LONDON MEDICAL and SURGICAL JOURNAL" immediately afterwards. Mr. Stanley published his cases of sympathetic or functional paraplegia in the Transactions of the Medico-Chirurgical Society for 1833—so that the two authors may lay equal claim to *priority* (Hibernice) without damage to each other's originality. Both authors must have observed and collected their facts or data long before the æra of their publication. Besides, the journal in which Dr. Graves' lectures were published, had dwindled away, and was hardly read by any one at the time in question. The theory of our author is clearly and succinctly conveyed in the following sentence:—"It is, however, unnecessary to multiply examples to prove the truth of the proposition, that disease may commence in one portion of the nervous extremities, and be propagated towards the centre, and hence by a reflex-action, to other and distant parts." 398.

Dr. G. has collected, chiefly from his own experience, a very large mass of facts bearing on this obscure form of paralysis, which will amply repay the most careful perusal and reperusal. We shall glance at a few of these.

Case 1.—In Nov. 1832, our author attended a young gentleman, aged 14, who had eaten a large quantity of nuts, and suffered the usual penalties of pain, nausea, constipation, &c. These being removed by the usual means, enteric inflammation ensued, and was, with great difficulty, conquered. At length, he was ordered to sit up, and then, to his astonishment, found that he was completely paraplegiac! Sensibility, however, remained, and the muscular power of the bladder and rectum was unaffected. It does not appear that this young gentleman recovered. Other cases are related where paralysis followed enteric inflammation.

"There can be little doubt that others have frequently noticed the occurrence of paraplegia after inflammation of the bowels, although no author has as yet written upon the subject. It is well to be acquainted with the occasional occurrence of so untoward and obstinate a sequela of enteric inflammation, in order that we may watch attentively the state of the lower extremities immediately after the inflammation of the bowels has been subdued." 404.

Case 2.—A sailor, aged 38, was admitted into the Richmond Hospital under Dr. Hutton, who had had several illnesses, but the last was occa-

sioned by wet, cold, and fatigue, while on a passage from Cadiz to Dublin, in 1834. He became affected with pain and weakness in his back and legs, with frequent micturition. He was cupped on the loins—diluents and opiates for the vesical irritation—bougies for a very close stricture in the membranous part of the urethra. "A very remarkable amendment took place in his back and lower extremities in a very few days after the introduction of the instrument," and he was soon discharged cured.

Cases are next related where paraplegia has followed fever, and without any apparent lesion of the spine or its contents. But we must conclude by stating the heads of a very remarkable case indeed.

Case 3.—Mr. B. aged 23, had been strong and hearty, passionately fond of hunting and shooting, and often getting wet in the bogs and moors. His bowels had been originally costive, but latterly relaxed. His "ATTACKS" were generally preceded by a copious discharge of insipid saliva from the mouth, followed by protracted nausea and vomiting of whatever happened to be in the stomach first, and afterwards of whatever he swallowed. The matter ejected was, in the beginning, acid and bitter, varying in colour, but generally green. The quantity thrown up in the day amounted to three or four quarts of fluid. There was pain in the stomach and lower part of the chest, of a constrictive nature. The first attack lasted four or five days, followed by an interval of seven months' good health, when the symptoms suddenly returned for a few days, and then went off. In 1830 he had three attacks, with intervals of health. In 1831, the paroxysms became much aggravated—lasted longer, and the intervals were shorter. For one of these attacks he took mercury to ptyalism. In 1832, all went on worse and worse, and he complained of numbness and some loss of power in the lower extremities, disappearing, however, when the vomiting subsided.

In August 1832, he had a violent attack, which lasted nearly a month—the vomiting continuing night and day incessantly. On getting up, after this attack, he found, to his astonishment, that he was paraplegiac. This paralysis did not disappear in the succeeding interval, though it was somewhat mitigated after the paroxysm, so that he could hobble along on two sticks. The next attack completed the paraplegia. His legs now wasted—lost sensation—and were cold to his own feelings. He had severe twitches of pain in various parts of the body.

"For some months before his death he was completely paraplegic, and continued to be attacked with violent fits of vomiting. The vomiting went on night and day, and he was unable to retain the mildest and most soothing substances for a moment on his stomach. Mr. Crampton and Dr. Ireland attended him with me, and we had recourse to every thing we could think of to allay the irritability of his stomach, but in vain. After continuing to resist obstinately every form of treatment for five or six days and nights, the vomiting would suddenly cease, the gentleman would exclaim, 'Now I am well,' and he could then eat with perfect impunity, substances which would prove irritating and indigestible to many stomachs. This was one of the most singular circumstances I ever witnessed. The transition from a state of deadly nausea and obstinate retching, to a sharp feeling of hunger used to occur quite suddenly. One hour he was the most miserable object you could behold, racked with painful constrictions across the epigastrium, alternately flushed or bathed with cold perspiration, and rejecting

every thing from his stomach, the next found him eating with a voracious appetite whatever he could lay hold of, and digesting every thing with apparent facility."

"It may be observed that as the disease in this case proceeded, the intervals between the attacks diminished, while the paroxysms increased in duration. For the first two years they continued only for four or five days, and appeared at intervals of six or seven months; latterly they used to last for eight or ten days, and returned every third or fourth week. During the paroxysm the only thing which he took was a little cold water with some brandy and a few drops of laudanum, which remained longer on his stomach than any thing else, and enabled him to enjoy a few minutes sleep. He never complained of any headache, and his intellect was remarkably clear, and his memory good." 413.

He was worn out by this dreadful malady, and died on the 30th September, 1833. Every part of the body—head, spine, thorax, abdomen, &c. was most carefully examined, in the presence of excellent judges, and not an iota of change of structure could be detected any where!! Even the stomach, which bore the brunt of the terrible disorder for so long a time, "was perfectly healthy." Who, after this, will say that *functional disorder* will not destroy life, without leaving any trace of organic lesion? In respect to the point for which this case was introduced, it clearly proves that paraplegia may be produced by sympathy with some other or distant part—or by disordered function in the spinal marrow itself.

Here we must close our very imperfect notice of this valuable work, the nature and multifarious contents of which defy any thing like an analytical review, even if the whole of one of our numbers were dedicated to the attempt. We have little doubt, however, that these clinical lectures will obtain a very wide circulation, and a very attentive perusal.

THE PRINCIPLES OF GENERAL AND COMPARATIVE PHYSIOLOGY. Intended as an Introduction to the Study of Human Physiology, &c. By *William B. Carpenter*, M.D. Lecturer on Physiology in the Bristol Medical School, &c. Second Edition. London, Churchill, 1841. Royal 8vo. pp. 577.

OUR general opinion of this work has been already made known (Med. Chir. Review, July, 1839). Our notice of the former edition was indeed mostly confined to a brief enumeration of its different sections, a more elaborate survey of its contents having been reserved until it should have reached its present enlarged form. But we are bound to say that no dissatisfaction with the work, even in its original state, prevented our entering into a full examination and analysis of it at the period of its first appearance; for it is throughout a most lucid, comprehensive, and learned exposition of physiological science in all its multifarious ramifications, and one which is adapted to keep its readers fully abreast of all the new discoveries and views elicited by physiologists generally down to the present day. A book like that before us was much needed to fill a glaring hiatus in English literature; and we feel proud to think that, instead of its

being a translation from a foreign production, the very plan as well as substance of the work has emanated from the mind of one of our own countrymen. At the same time, the works of foreign writers have been far from disregarded in its progress; and the researches not only of the older but of the most recent physiological inquirers on the Continent—as Müller, Wagner, Ehrenberg, Henle, Valentin, &c.—have been carefully consulted; as well as those of Mayo, Grant, Owen, Lindley, Sharpey, Wilson, Paget, &c. in Great Britain—by the laborious author. Yet, notwithstanding the magnitude of the task, and the necessity for the extensive research which Dr. Carpenter had imposed on himself, his work has the striking merit of not appearing laborious. The style is easy and clear; and the subjects to which the book refers, which, if treated after a different manner, might have repelled the general reader by their complexity, are, by their mode of exposition, both rendered attractive and readily intelligible to every reflective mind of even the most moderate capacity. We propose in this place to devote a few pages to following the author through the several divisions of his subject, extracting from his book such passages as either most fully and happily display his views, or are otherwise most striking in their character. Before doing this, we may premise that our comments will not, in every instance, be laudatory; but we shall probably terminate our examination (and we here speak both for ourselves and our readers) with the same general impressions as those with which we have begun it.

Commencing his treatise on organised structures with a few words on the distinctions between these and inorganic bodies,—for it has been justly remarked that at whatever point we may begin a history, we shall have to refer to some anterior period,—Dr. Carpenter says—

"In a mineral, every particle possesses a separate individuality, and whatever changes this undergoes in obedience to physical agencies, these changes occur in conformity to laws which apply to it as well separately as in conjunction with others; whilst, in a living being, the action of all parts of the machine are so connected together, that whatever influences one single particle of the organism on which these actions depend, will more or less affect the entire system. Thus we may suppose a mass of gold alloyed with a small quantity of silver, and immersed in nitric acid; this chemical agent will affect every particle of the silver, as completely as if the mass consisted of nothing else, and will leave the gold in its previous condition, having of itself no power of dissolving it. On the other hand, a similar chemical agent applied to an organised structure, will not only destroy the integrity of the part itself, but will produce a disturbance of the general functions proportional to the importance of the organ which has been injured." 7--8.

And in a happy style of phrascology he adds,—

"In the mineral or inorganic world, *change* is the *exception*, and *permanence* is the *rule*; whilst in the animated kingdom, *change* is constant and universal, and is indeed essential to our idea of life." 9.

How closely allied soever may be the organised kingdoms of Nature (and the Lichens and Sponges seem certainly very nearly connected,) a strong line of demarkation is placed between these and the inorganic world. This Dr. Carpenter of course admits. But he singularly enough attributes to the animal and vegetable forms which the more nearly approach the

mineral kingdom in some of their characteristics, a greater inherent power of change—rather than a less exalted capacity for it, as would naturally be implied both in their approach towards the condition of mineral bodies, and in their remoteness from the higher forms of animated nature; in which life, with its synonym *change* (see preceding extract,) in its highest degree, may be supposed more eminently to reside. Take the following sentences—

"Although, as has been stated, the characteristics of organisation are never so far absent from the living structure as to indicate a transition to the mineral world, it is interesting to remaak that, as we descend in the scale of animated creation, we find these peculiarities less striking. And with regard to *form*, it may be observed that this seems least definite among the Sponges and Polypifers (coral-formers) among animals, and among the lowest groups of cellular plants among vegetables; and that there is reason to believe that among these *the same germ may assume a variety of distinct forms*, according to the circumstances under which it is developed, just as the same mineral substance may present itself under a diversity of crystalline shapes." 12.

We cannot pass over this last remarkable admission without observing that the doctrine it conveys, if found to be based on established laws, might prove a powerful engine in the controversy which has long divided philosophers and literati as to the descent of the whole human race from a single stock. If, indeed, it be only understood by the passage printed above in Italics, that many of the organised forms, to which botanists and comparative anatomists had given different specific names, have been since proved to be only different phases of a single species, the deduction is not to be gainsaid. But if, as the hesitating nature of the context would seem to imply, *more* than this be meant, and that *separate species* may be produced from the same germ, we must object to admit the doctrine as any sort of evidence, in the controversy alluded to, from a strong doubt of its validity. Neither does the analogy drawn from the mineral kingdom hold good. Each inorganic substance has in fact its proper qualities and crystaline form impressed on it, and when it loses these, it ceases to be the *same mineral substance*. The notion that the same germ might assume essentially distinct forms is in fact only fit as an argument for the old-fahsioned and visionary theorists—if any such remain—who have contended for the preposterous idea, that the higher forms of organised nature, including man himself, have proceeded from the progressive development of the lowest germs of organisation into superior forms from the first period of organised creation; an atheistical dream, which nearly all modern physiologists, Dr. Carpenter among the rest, have agreed to explode.

We have been thus critical at the outset for the purpose of warning the reader to examine for himself as he reads; lest he be called on unwittingly to tender his assent to positions which, not bearing the semblance of authenticity, may, if entertained, hereafter embarrass him in his search after truth. Our future observations on particular passages will be generally more brief. But were we to go on step by step through the work, we should meet with many statements, in which we could not wholly coincide, and which would require an equally long examination with the foregoing. Thus when, at p. 14, Dr. Carpenter speaks of the earthy and saline particles in the bony structure of animals as being "evidently subject to no laws but those of physics and chemis-

try," he decides too hastily upon a question which has by no means been freed from doubt; viz., whether these crystalline particles deposited within the system are to be considered as endued or not with a share of its vitality. It is true that with "the bane," Dr. Carpenter administers "the antidote;" for in his 46th Section he states, "the osseous tissue retains a higher degree of vitality than the cartilaginous,"—an admission which ought certainly to be considered as overturning his previous decision. But when he asserts (p. 15) that the nervous matter "is constantly being renewed in the living body," we are called on to demand the proof of this, which would rather seem to be contradicted by the absence of lymphatics in the brain and spinal chord—a faith in which absence (whatever may be our own internal impressions on the subject) it is still a matter of philosophical etiquette to hold. The absorbing power of the veins, however, is there.

To Dr. Carpenter's copious survey of the anatomical characteristics of the great divisions of the vegetable and animal kingdoms we cheerfully accord its meed of approbation as a very complete general view of the organised world. But here again observations are often started which call for comment. Thus, the question arises—

"Whether all the fungoid growths on the surface of living plants are really such, or whether they may be regarded as degenerations of the tissue upon which they are found. Unger, a German botanist, has argued with considerable ingenuity that the appearances termed blight, mildew, smut, &c. are to be considered as the *exanthemata* (eruptive fevers) of vegetables, being essentially diseases of the stomata. * * * It remains a question, which we are yet scarcely in a condition to answer without reserve, either in one way or the other, whether plants of a high degree of organisation are capable of producing, by diseased action, from various parts of their tissues, beings which present the characters of inferior orders. * * * We shall hereafter see that the function of reproduction may be considered as only a peculiar modification of that of nutrition; and if its *regular* performance leads to the evolution of germs, which, when developed, resemble the parent, it is not irrational to suppose that it may be so far perverted, as to give origin to beings of simpler organisation." 73.

Now the enunciation of this opinion is a retrograde march to the proposition which we have already combated, of essentially different organised forms being generated from the germ of a single organised species. We are naturally bound to exclaim,

Nec Deus intersit, nisi dignus vindice nodus
Inciderit— Hor.

Why call in a new power, if the effect be referrible to those we know of as already existing? It is surely more consonant with a philosophic spirit, first to examine narrowly if laws and arrangements, of the truth of which we are already assured, be capable of producing the phenomena which we witness. How can we doubt, when Fries has counted in a single fungus (*reticularia maxima*) upwards of 10,000,000 sporules, so subtle, as Dr. Carpenter himself observes, that they are "scarcely visible to the naked eye, and often resemble thin smoke, so light that it is difficult to conceive a place from which they can be excluded, and dispersed in so many ways by the attraction of the sun, by insects, wind, elasticity, &c."—why need we doubt that these and the germs of other species, at their time of maturity, float in

myriads through the atmosphere ready to develop their parent forms in whatever soil (such as the diseased secretions of other plants) may be best adapted for fostering their growth?—an hypothesis unequivocally more conformable with probability than any other which has been offered to account for the development of parasitic plants. That germs are carried and plants are developed in this way, is proved by the following curious fact.

"Individuals of a species of *Polistes* (the *wasp* of the West Indians) are often seen flying about with plants of their own length projecting from some part of their surface; the germs of which have been introduced, probably through the breathing pores at their sides, and have taken root in their substance, so as to produce a luxuriant vegetation." 73.

We should hardly have expected, *à priori*, to find *Zoophytes* so high in the scale of creation.

We shall close our notice of what is called the introductory portion o the work by the following passages, which place before the reader pleasing, if fanciful, analogies between the great divisions of the animal and vegetable kingdoms.

"The correspondence of ARTICULATA with ENDOGENS, as well as that of VERTEBRATA with EXOGENS, was long ago pointed out by Desfontaines, who first discovered this primary natural division of the Phanerogamia founded on the structure of their stems. Thus both of the groups just mentioned have their hardest portions, or organs of support, placed externally; in both, the additions to their tissue are formed from within; in both, also, there is usually a distinct division into segments, each of which, in plants, as in the lower Annulose animals, contains the organs essential to its vitality; and in Endogens, as in Insects, are the *tracheæ* (respiratory tubes) distributed through the whole system. The hard external parietes of these classes undergo little or no change in diameter when once fully formed; but Endogenous plants have not that power of occasionally throwing them off, which is possessed by most of the Articulated animals.

"In like manner, EXOGENS may be considered analagous to VERTEBRATA, in the internal situations of their hard parts, the formation of new tissue from without, the less distinct division into segments, and the confinement of the internal respiratory apparatus to a particular situation in the fabric." 137.

Book 1, which treats of General Physiology, opens with a chapter on the Nature and Causes of Vital Actions, comprising a disquisition on the subject of the vital principle, which as it has been brought under review on a former occasion (Med. Chir. Review, July, 1839,) we shall for the present pass over in silence; though it will be alluded to once more before the termination of the present article. Heat, light, and electricity, as vital stimuli affecting the organism; and some of the effects of food and air in modifying the growth and development of the body, are the subjects next entered upon. Some extracts from these sections will be found interesting: for instance, the description of the following curious effect of food in modifying the development of the frame in one of the lower classes of animals.

"In every hive of bees, the majority of individuals consists of *neuters*, which have the organs of the female sex undeveloped, and are incapable of reproduction; that function being restricted to the *queen*, who is the only perfect female

in the community. If by any accident the queen be destroyed, or if she be purposely removed for the sake of experiment, the bees choose two or three from among the neuter eggs that have been deposited in their appropriate cells, which they have the power of converting into queens. The first operation is to change the cells in which they lie into *royal* cells, which differ from them considerably in form, and are of much larger dimensions; and when the eggs are hatched, the maggot is supplied with food of a very different nature from the farina or bee-bread which has been stored up for the nourishment of the workers, being of a jelly-like consistence and a pungent stimulating character. After the usual transformations the grub becomes a perfect queen, differing from the neuter bee into which it would otherwise have changed, not only in the development of the reproductive system, but in the general form of the body, the proportionate length of the wings, the shape of the tongue, jaws, and sting, the absence of the hollows on the thighs in which the pollen is carried, and the loss of the power of secreting wax." 169.

"The following curious fact may be introduced here, as having an interesting analogy with that just now stated regarding the bee. It is mentioned by Mr. Knight that cucumber and melon plants will afford all male or staminiferous flowers if vegetation be accelerated by heat; and all female or pistilliferous, from the same points, if its progress be retarded by cold." 173.

The influence of light in favouring animal development is strikingly pointed out in the following passage.

"The influence of light on Animal development has been proved in the most striking manner by the experiments of Dr. Edwards. He has shown that if tadpoles be nourished with proper food, and are exposed to the constantly-renewed contact of water (so that their branchial respiration may be maintained) but are entirely deprived of light, their growth continues, but their metamorphosis into the condition of air-breathing animals is arrested, and they remain in the form of large tad-poles. Dr. E. also observes that persons who live in caves or cellars, or in very dark and narrow streets, are apt to produce deformed children; and that men who work in mines are liable to disease and deformity, beyond what the simple closeness of the atmosphere would be likely to produce. It has been recently stated, on the authority of Sir A. Wylie, that the cases of disease on the dark side of an extensive barrack at St. Petersburgh, have been uniformly, for many years, in the proportion of three to one, to those on the side exposed to strong light. On the contrary, the more the body is exposed to the influence of light, the more freedom do we find, *cæteris paribus*, from irregular action or conformation. Humboldt has remarked that, among several nations of South America who wear very little clothing, he never saw a single individual with a natural deformity; and Linnæus, in his account of his tour through Lapland, enumerates constant exposure to solar light as one of the causes, which render a Summer journey through high northern latitudes so peculiarly healthful and invigorating." 180.

This passage affords a strong testimony to the practical benefits which scientific inquiries are capable of producing to mankind, if only a due attention be paid to the results which they bring into view.

In the chapter on the laws of Organic Development, the great law of *unity of composition*, by which the various forms of animated nature (as is especially seen in the vertebrated classes) are modifications of a uniform type, is broadly laid down.

"Thus it would be easy to show that the skeleton of a fish is formed of the same parts as that of a bird or quadruped; though the form of each individual bone may be totally dissimilar in the two cases. Again, we have seen that the

lung of the air-breathing Vertebrata exists in a rudimentary condition in fishes, whilst the rudiments of a branchial apparatus are found in the embryos of the higher classes."

"The skeleton essentially consists of a jointed column of bones enclosing the nervous system, with which certain appendages are connected for various purposes. The different parts of this column appear in the highest classes, very dissimilar to one another,—thus, the bones of the skull have no apparent resemblance to the vertebræ of the back; and these seem but very imperfectly represented in the joints of the tail. Further examination, however, will show that the skull is but an expansion of the three highest vertebrata, modified to afford space for the development of the contained brain, and of the organs of sense; and, however strange such a statement may appear to those who are only acquainted with the cranium of man, the fact is evident where the brain is little developed, as in the lower reptiles and fishes." 191.

But in tracing up the history of the functions of the animal frame from its lowest to its highest system of development,—a task which he has executed with signal ability—Dr. Carpenter still gives in occasionally to opinions so unfounded and startling as to call for a decided protest. Thus he asserts,—

"There is no good reason to believe that 'nervous agency' is essential to the processes of nutrition and secretion in animals, any more than to the corresponding processes in plants. * * * Observation shows us that these processes are performed in the most complex and elaborate manner by vegetables, in which all the attempts that have been made to prove the existence of a nervous system have signally failed, (these attempts seeming to have been only excited by an indisposition to admit the possibility of any vital actions being independent of nervous influence;) that the lowest animals appear equally destitute of a nervous apparatus destined to influence them." 209.

By the far greater number of physiologists, the performance of these functions has been attributed to the agency of the sympathetic nervous system—a system, the presence of which, together with that of a digestive cavity, we would propose as the best definition of an animal, as contradistinguished from a vegetable organism. For though it may not yet have been demonstrated by microscopical observation, all analogy still warrants us in presuming on the presence of a nervous system in even the lowest animal forms; and this system will assuredly be the ganglionic, or that to which the nutritive and other involuntary functions are subservient —the voluntary nervous system (which in the Vertebrata becomes the cerebro-spinal) not being superadded till we ascend higher in the scale of beings. Nay, it has even been advanced, that no animal tissue is formed except coetaneously with the nervous matter supplied to it. And the circumstance of plants performing their various functions without the agency of a nervous system, is an instance altogether futile for the argument which the author wishes it to subserve; being only one of the many proofs that the Divine Author of Nature can effect analogous ends by widely dissimilar means. For examples of this we need not step beyond the animal kingdom itself. We see the function of trituration of the food, which in one vertebrated class is performed in the mouth, to be in another class performed in the stomach; and that motion through the air which in the bird is effected by a true wing, is effected in the insect by a true respiratory organ.

In that portion of the work in which the functions of digestion and absorption are traced upwards in the animal kingdom, we are called on to notice the measure of success which has attended the experiments of some German physiologists in forming an *artificial* gastric juice. This has been formed, by Müller and Schwann.

"Of a mixture of dilute acetic or muriatic acid with mucous of the stomach; the simplest way of manufacturing it being, to macerate a portion of mucous membrane in the acid. Neither acids nor mucous will act alone; but the correspondence of their united effect, so far as it goes, with that of the gastric juice, can leave no doubt that the operation of the latter is of a chemical nature; it has been recently shewn, by Purkinje and Pappenheim, that the influence of galvanism enables saliva or mucus alone to dissolve albumen, by decomposing the chloride of sodium which these fluids contain, and thus liberating muriatic acid.

"There is no difficulty, therefore, in accounting for the presence of muriatic acid in the stomach." 236.

And in the same section, the remarks on the *natural* secretion of the gastric juice might not be without their moral usefulness, if read and attended to. We particularly commend them to "the English epicures.'

"It appears from the experiments and observations of Dr. Beaumont, that the secretion of gastric juice does not continue in proportion to the quantity of food taken into the stomach, although at first excited by its contact, but is regulated by the wants of the system; so that, when sufficient nutriment has been provided for absorption, no further active process of digestion goes on, although the will inattentive to the dictates of Nature, continues to transmit to the stomach more food than is dissolved at the time. Vegetables cease to absorb when the structure is replete with food, and there is no continued demand for it. The more we pursue our remarks into the actions of plants and of the lower tribe of animals, the more we are struck with the beauty of the adaptations, by which the influence of a capricious will, which would often be to the injury of the system, is rendered unnecessary." 238.

We are next drawn to notice the following view of alimentation.

It is curious to observe, in the progress of the food along the alimentary canal of higher animals, the gradual removal of it from connection with the functions of (so-called) *animal* life. To procure it, in the first instance, is one important office of these functions; and the highest exercise of the locomotive, sensorial, and intellectual powers is often required for this purpose. Its introduction into the mouth is an act of pure volition in man; while the masticatory movement to which it is there subjected may be regarded as having been originally voluntary, but as afterwards so completely habitual as to be scarcely dependent on the will, although not removed from its control." 237.

An able summary of the progressive development of the digestive tube closes the chapter on digestion.

"Its simplest evolution may be seen in the gemmules of the sponges, which at first are permeated by no canals; but, as they fix themselves, depressions are seen on their surface, which gradually deepen into tubes, and these ramify and unite to form the system of passages peculiar to these beings. In the Radiata, in general, it appears to be formed simply by the inner layer of the germinal membrane, which spreads itself over the yolk, and forms a bag, at first closed, but afterwards perforated by an orifice which constitutes the mouth. Its most complex forms may be traced from an equally simple commencement; for in the embryos of the Vertebrata the intestinal canal first exists, as a straight tube,

formed by a fold of the germinal membrane; thus evidently corresponding with its condition in the lower Annulose tribes. The two ends of this tube are at first closed, the middle portion opening into the yolk-bag, which contains its store of temporary nutriment. In the human fœtus, the oral opening is formed at the sixth week, the opposite one a week later; sometimes the latter remains closed even until birth. The stomach is first distinguished, by a projection of the tube towards the left side, about the ninth week; but the separation of the small and large intestines is of much later occurrence. The folds of the mucous membrane, which are confined to higher animals, do not appear until a late period of gestation." 250.

From what has already been advanced, our readers will readily have gathered that we think higher of Dr. Carpenter when he confines himself to description than when he wanders in the mazes of conjecture. Such is the fact. We think better of his judgment, than of his fancy. He is an excellent compiler: he seizes the facts which are laid before him—condenses, prunes, elucidates—and describes the thoughts or the observations of others, in concise terms and in good language. And, this being the case, our future extracts, which must be few, will be principally confined to examples in which he has recorded plain facts in the most happy style.

The book improves as it proceeds; but want of space compels us to pass over the chapters on Circulation, Absorption, Nutrition, and Respiration, with little comment. The last of these chapters comprises Dr. Carpenter's own view of the respiratory process. The detail of this view is too lengthy to insert here, and it deserves to be studied in an unmutilated form,. We may remark, however, that the author includes under the phenomena of respiration, the absorption of nitrogen by the lungs, (p. 368.) In this, his opinion is directly opposed to that of Liebig, who plainly asserts that "no nitrogen is absorbed from the atmosphere in the vital (respiratory) process."—(Liebig and Gregory, &c. p. 43; in which work the subject is discussed at length.)

On the subject of exhalation from the surface in animals the following statement is made, which may furnish a good starting-point for more extended inquiries in this department of physiology.

"From the experiments of Levoisier and Seguin it appears, that the maximum quantity of fluid exhaled from the cutaneous and pulmonary surfaces in man is 5lbs. per day, the minimum being 1½lb.; and that the mean quantity exhaled per minute is 18 grs. of which 11 pass off by the skin, and 7 by the lungs, There is much difficulty in attaining correct information on this subject, however, owing to our ignorance of the amount absorbed from the atmosphere; and that, under favourable circumstances, the quantity of fluid exhaled from the skin may be much greater in a short time than these results would lead us to believe, appears from the late observations of Dr. S. Smith. These were made upon labourers at the Phœnix Gas Works, who are employed twice a day in drawing and charging the retorts and in making up the fires; which usually occupies about an hour; the labour is performed in the open air, but is attended with much exposure to heat. On a foggy and calm day at the end of November, when the temperature of the external air was 39°, and the men continued at their work for an hour and a quarter, the greatest loss observed was 2lbs. 15oz.; and the average of eight men was 2lbs. 1oz. On a bright clear day in the middle of the same month, when the temperature of the air was 60° without much wind, the greatest loss was 4lb. 3oz.; and the average was 3lb. 6oz. And on a very bright and clear day in June, when the temperature of the external

air was 60° without much wind, the greatest loss (occurring in a man who had worked in a very hot place) was 5lbs. 2oz.; and the average during the hour was 2lbs. 8oz." 385.

These observations are succeeded by chapters on Secretion, the Evolution of heat, Light, Electricity, &c. in Organic Beings. In the section on the evolution of heat, the following remarks appear, derived from a paper in the Philosophical Transactions by Mr. Newport.

"In the *Larva* condition the temperature of the animal corresponds much more closely with that of the atmosphere than in the perfect state; thus, the larva of the higher species of *Hymenoptera* (humble-bees, &c.), is usually from 2° to 4° above the surrounding medium, whilst the perfect insect has a range of from 3° to 10°, or even more; and the caterpillar of the *Lepidoptera* (butterfly tribe,) is seldom more than from ½° to 2° warmer than the atmosphere, (the amount varying in close relation with the activity of the individual;) whilst the perfect insect is, when much excited, to 5° or 9° above it." 421.

The writer of the present article is glad to perceive that extensive use has been made, not only in the above place, but throughout many appropriate parts of the work, of the accurate and valuable researches of our countryman Newport, a personal knowledge of whom enables him to bear testimony to the singular zeal and industry of the latter in entomological inquiry. This is at the same time a fitting place to accord due praise to the indefatigable zeal of Dr. Carpenter, who has spared no pains in the search after all authentic information upon physiological science, wherever it was to be found.

On electrical development in certain animals, many interesting considerations are brought together. In tracing the nerves of the electrical apparatus in the principal electrical fishes, Dr. Carpenter remarks,—

"In all these instances, the electrical organs are supplied with nerves of very great size, larger than any others in the same animals, and larger than any nerve in other animals of like bulk. They all arise in the Torpedo from the cranial portion of the cerebro-spinal axis; of these, the two first issue from the cranium in close proximity with the 5th pair, and have been regarded as belonging to it, although their real origin is different; and, from the third electrical nerve to the stomach, after sending its principal portion to the electrical organs, it would seem analogous to the 8th pair. The electrical nerves in the Gymnotus are believed to arise from the spinal marrow alone; and those of the Silurus are partly intercostals, and partly belong to the 5th pair." 438.

Now the circumstance that the electrical nerves in the Torpedo should be analogous to the 8th pair in the higher Vertebrata is one of a highly striking nature. Of all nerves in the human subject, the 8th pair (the par vagum) is that which, with the organs to which it is distributed, appears to exhibit the most intimate sympathising connection with cerebral impressions. The influences of fear and anger (which are probably the chief exciting causes of the instinctive electric discharges of the Torpedo), of hope, affection, and indeed of all passions, whether of an exciting or depressing kind, are inevitably manifested more or less on the heart, lungs, stomach, larynx, &c., and which derive their nervous influence partly through the branches of the par vagum; and these manifestations are often attended with considerable alterations in the secretions of these organs or a great exaggeration of their vitality. Nay, the analogy is even further carried

out by pathology. For in hydrophobia—a disease in which the nervous energy is, in paroxysms, exalted to the highest pitch, and the secretions of parts to which the 8th pair is supplied, are exasperated into a poisonous quality,—the chief pathological lesion discovered after death has been *said* to be an inflammatory state of the trunk of the 8th pair where it issues from the skull.

We have no hesitation in stating, that the chapter on Reproduction is the best part of the whole work. But we can spare room only for the following comprehensive extract.

"All organised beings, without exception, take their origin in a *cell* or vesicle; and there is nothing in the appearance or character of the embryonic cell of the animal, to distinguish it from that of the plant, or from the permanent cells of the simplest vegetable fabrics. This form of structure, therefore, is at the same time the simplest and most universal in the organised world; and it embodies the whole idea of organisation. It consists of a solid and fluid part—a containing and contained portion,—acting and re-acting upon each other. From this *most general* condition, therefore, of an organised body, which is the first that manifests itself in the production of a new structure, a more special form soon evolves itself; for changes speedily take place in the character of the embryonic mass, which enables the observer to determine the *kingdom* to which it belongs. At first, however, there is nothing in its aspect which determines its more special type or *sub-kingdom*,—Radiated, Annulose, Molluscous, or Vertebrated; but this is next evolved. The characters of the particular *class* then manifest themselves; the embryo of the Mammal, for example, is known from that of the Bird, by the difference in the changes which take place in reference to the yolk-bag, before the particular *order*, *family*, *genus*, and *species* to which it belongs, can be determined from its structure. These are progressively manifested,—the original law of the elaboration of a special type out of one more general being closely applicable here. The characters of the *sex* make their appearance at a later period; but it is not until *birth* that those of the individual properly display themselves." 499–500.

Deus dabit his quoque finem. We are rapidly reaching the utmost extent of our limits. But the planting of our god Terminus must be for a few instants arrested, while we cite, in Dr. Carpenter's own words, the expression of an idea, on the hereditary transmission of acquired powers, in which we fully and warmly concur.

"No one, who has had sufficient opportunities of observation, can doubt that the intellectual faculties, which have been developed by cultivation, are generally transmitted to the offspring in an improved state; so that the descendant of a line of educated ancestors will probably have a much higher capacity for instruction than the child that springs from an illiterate race." 512.

How wide a field for discussion and for action does this consideration present! How gravely do the spread of education and the *science* of intermarriage address themselves to the attention of the philanthropist and the legislator! The fruits of care and culture are not confined to the well-being of a single individual: they bear within them the blessings of increase; and multiply tenfold with each succeeding generation.

In the notice of the first edition of this work in the Medico-Chirurgical Review, all special observation was confined to an exposition of Dr. Carpenter's view of the Nature of the Vital Principle, chiefly for the purpose of affording a comparison between it and the theories of other authors

upon the same subject. If some of these theories are absurd or mischievous, the same complaint is not applicable to that of Dr. Carpenter. This may exhibit little that is novel; but neither has it any thing presumptuous.—in it is no attempt "to fathom the unfathomable," which is so much the characteristic of conceited ignorance, or German transcendentalism. In all its broad lineaments, Dr. Carpenter's portrait of vitality agrees with that of Liebig, and as we have already, in another place, travelled side by side with Dr. Carpenter in his journey of discovery after it, we will not go over the same ground again, but refer to what Liebig has to say on the subject;—chiefly for the purpose of filling up our Bombastes' army, if not "awkward squad" of theories respecting the "vital principle." Liebig then,—who judges of the cause itself from its effects; I. As a force of attraction; II. As a means of resistance; and III. As a cause of motion in the material frame—considers Vitality as "a peculiar property, which is possessed by certain material bodies, and becomes sensible when their elementary particles are combined in a certain arrangement or form;" but which remains occult in matter until its elements have assumed such an arrangement or form. The origin of the vital force he attributes to a change of matter: but while he admits that "the laws of vitality, and of all that disturbs, promotes, or alters it, may be discovered," he still frankly acknowledges that "we shall never learn what life really is—of what it essentially consists."* Drawn once more to the contemplation of this mysterious secret as the proper termination of his theme, Dr. Carpenter winds up his labours with the following truly eloquent peroration.

"It has been one object of the foregoing pages to show that *vital* properties are as essentially connected with certain forms of matter, as are those usually denominated *physical* with matter under its more common aspects. One more question yet remains. Is it possible that the physical and vital properties of matter, which are at present our ultimate facts or axioms, may be included within a more general expression common to both? On this subject we can only speculate; but the probability appears decidedly in the affirmative. It has already been remarked, that the rapid progress of generalisation in physical sciences renders it probable that, ere long, a simple formula shall comprehend all the phenomena of the inorganic world; and it is not, perhaps, too much to hope for a corresponding simplification in the laws of the organised creation, although its progress is necessarily retarded by the many obstacles, which the nature of the subject presents to the philosophic inquirer. Every step which we take in the progress of generalisation, increases our admiration of the beauty of the adaptation, and the harmony of the action, of the laws we discover; and it is in this beauty and harmony that the contemplative mind delights to recognise the wisdom and beneficence of the Divine Author of the Universe. This, in fact, is one of the highest results to which the exercise of our intellectual faculties should lead; and we cannot but believe, that the Creator, in endowing us with these faculties, intended that they should conduct us nearer to the conception of His Infinite mind. But, at the same time, the vastness of the prospect thus disclosed, can scarcely fail to impress us with the most humbling consciousness of our own insignificance.

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* Extracted from Mr. Ancell's Exposition of Liebig's Views, in the Lancet, 1842-3, Vol. ii. 232-235.

"If then we can conceive that the same Almighty *fiat* which created matter out of nothing, impressed upon it one simple law, which should regulate the association of its masses into systems of almost illimitable extent, controlling their movements, fixing the times of the commencement and cessation of each world, and balancing against each other the perturbing influences to which its own actions give rise,—should be the cause, not only of the general uniformity, but of the particular variety of their conditions, governing the changes in the form and structure of each individual globe, protracted through an existence of countless centuries, and adjusting the alternation of 'seasons and times, and months and years,'—should people all these worlds with living beings of endless diversity of nature, providing for their support, their happiness, their mutual reliance, ordaining their constant decay and succession, not merely as individuals but as races, and adapting them in every minute particular to the conditions of their dwelling,—and should harmonise and blend together all the innumerable multitude of these actions, making their perturbations sources of new powers;—when our knowledge is sufficiently advanced to comprehend these things, then shall we be led to a far higher and nobler conception of the Divine Mind than we have at present the means of forming. But, even then, how infinitely short of the reality will be any view that our limited comprehension can attain, seeing, as we ever must in this life, 'as through a glass, darkly;'—how much will remain to be revealed to us in that glorious future, when the light of truth shall burst upon us in unclouded lustre, but when our mortal vision shall be purified and strengthened so as to sustain its dazzling brilliancy!" 563.

We now close this volume, and look back upon it, *as a whole* with the same sentiments as those we entertained of it at the commencement. If we have seemed querulous or occasionally hypercritical, it has been because it is natural to wish that which we admire to be free from blemishes:—and these invariably stand out more prominently, the more attractive the field that they disfigure. Unqualified praise or censure belongs to comparatively few books. But taking this one "with all its faults" we can honestly say that we have met with few in which more truth is mixed with less error.

I. VON DEN KRANKHEITEN DES MENSCHEN. ALLGEMEINE PATHOLOGY. Von Dr. *K. G. Neumann.* Berlin, 1842.
On the Diseases of Man. General Pathology.

II. ELEMENS DE PATHOLOGIE GENERALE. Par *A. F. Chomel.* Paris, 1841.
Elements of General Pathology.

WE have now lying before us some half-dozen works, published within the last four or five years in France and Germany, on the important subject of general pathology, scarcely any two of which agree with respect to that which should constitute this science. Some have treated it as if they considered it identical with Semeiology; some have made it to consist al-

most exclusively of scraps of pathological anatomy. Whilst others, and these by far the most numerous, have introduced into their treatises, abstruse and metaphysical discussions regarding the various occult causes and nature of disease, discussions which should be altogether excluded from works intended for the perusal of students. The legitimate object of a work on general pathology is the study of diseases in the abstract, and in that which they have in common. It should serve as a complement to special or descriptive pathology, just as general anatomy does to descriptive anatomy. It should comprise all that is most simple and most elevated in science, on the one hand, the definition of the terms, and the description of the phenomena of diseases; on the other hand, the discussion of all the fundamental questions, and the exposition of the general principles which should serve to guide the physician in the arduous exercise of a profession so intimately connected with the dearest interests of humanity. General pathology, in fact, includes within itself the humblest elements and the most sublime philosophy of medicine.

Dr. Neumann, the author of the work mentioned at the head of this article, is well known all over the Continent by his medical writings. The work of his now before us he divides into two sections; the first treats of the Generalities of Disease, viz. the course, causes, symptoms, duration, &c. of disease—the second, of Diseases of particular Systems, as of the vascular, muscular, lymphatic, &c. systems.

We shall here pass over a great deal of what our author says on the causes and course of diseases, as being quite uninteresting to our readers, and proceed to the consideration of diseases of the arterial system. These he divides into those affecting the structure, and those affecting the motion of arteries: he first commences with *ossification*: this change of structure he observes increases with age; in persons under thirty years it is seldom observed; whilst in men beyond seventy it is seldom absent. Wherever such changes occur, they diminish the nutrition of the parts to which the arteries lead; nay, they ultimately suspend it altogether, and occasion a peculiar species of gangrene, not preceded by any inflammation whatever, but merely by a sense of weight in the gangrenous part, and impeded motion; this occurs in the aorta and in the arteries of the lower extremities. The coronary arteries of the heart are most prone to ossification.

Such is the account, and the entire account, given by our author of so important a subject as ossification of arteries is admitted to be. Not a syllable does he tell us with respect to the causes of ossification. Perhaps, however, he was prudent in observing silence on a matter of which so little is known. The partisans of the generel theory of irritation will have it, that ossification is the result of inflammation of the arteries. We know that obliteration of these vessels is oftentimes produced by inflammation; and this is so evident, that we may artificially produce this obliteration by exciting inflammation. But the case is entirely different with respect to ossification of the arteries. It has been urged, but without sufficient grounds, that the arteries most frequently ossified are precisely those most frequently irritated; such is not the case; it is not true that the arteries of the lower extremities are more frequently irritated than those of the upper. All the suppositions advanced on this subject are entirely erroneous. The fact is, we know nothing whatever of the causes of arterial

ossification; all we know is, that aged persons are more subject to this morbid change than young persons, and males more than females; but beyond this our knowledge does not reach.

The next question which presents itself to the consideration of the pathologist, and which our author does not even salute, is, how this ossification is established? what are the parts primarily affected? According to Bichat, it is the internal coat which presents the first traces of ossification; this is also Mr. Guthrie's opinion, an opinion, moreover, which he supports by several specimens of morbid anatomy. It has been stated, however, of late years, that the ossific deposits or plates are first found between the internal and middle tunics; others, in fine, think with Morgagni, that the disease commences by the middle tunic; be this as it may, after a certain time, the middle tunic is always affected, sometimes by the formation of small osseous scales, and sometimes by prolongations of a fibrous appearance.

If the manner in which the osseous laminæ of the arteries have been formed has been thus controverted by authors, there has been no less difference of opinion with respect to the nature of these osseous products; it has been asked, in fact, whether they are to be attributed to a simple deposition of calcareous matter, to a mere inorganic superposition between the arterial tunics, or whether they are organized like bones. The first question has been answered in the affirmative by Hodgson and Beclard, who however made some exceptions; Morgagni, on the contrary, admitted that it was the same with the ossification of the arteries as with that of the falx cerebri; that, in the two cases, there is a real organization, which appears probable enough; since the two products, when treated by chemical processes, yielded about a third of animal matter, with two-thirds of phosphate of lime.

Though we can hazard nothing but mere conjecture regarding the causes of arterial ossification, and with respect to its mode of production, one part of the subject, at least, we know full well, namely, the fatal effects produced in the system by this species of degenerescence. These effects are local and general. The principal local effects are inflammation, rupture, contraction, obliteration, ulceration and erosions of these vessels; aneurysms, in some cases, have been referrible to this cause. The general effects produced by ossification of the arteries are very numerous. They may result from ossification of the aorta; now, it is evident that ossification of this vessel must introduce serious disturbance into the circulation, and thereby into all the functions of the œconomy. Some go so far even as to say that to this morbid change must be attributed the state of *decrepitude* observable in aged persons, and even to consider all cases of premature old age as the result of calcareous incrustation of the arteries.

There are two other states attributed, and with good reason, to ossification of the arteries, viz. atrophy and gangrene. The heart is found atrophied in cases of the coronary arteries being atrophied. Some have supposed that the diminished size of the brain in some individuals might depend on the basilar and internal carodid arteries being ossified. Gangræna senilis has been attributed to arterial ossification.

Our author next notices dilatations of the arteries and aneurysms; on

this subject he says, that "either the artery, as the aorta for instance, becomes extended, or the external membrane of the artery gives way, and the inner tunic escapes from the fissure in the form of a sac: this constitutes *aneurysm*. The places where these dilatations occur most frequently, are the arch and origin of the aorta, more rarely the descending aorta; the iliac, femoral, popliteal and brachial arteries. They may occur also in other places, and occasionally entire arteries degenerate in such a manner, as to make their appearance at the same time in several places."

This, we must confess, is a very meagre account of so important a morbid change as aneurysm, in a book especially devoted to general pathology. Aneurysms have been conveniently divided into *spontaneous* and *traumatic*, the former arising from internal causes and the latter from external injury. Spontaneous aneurysms have been again subdivided into *true* and *mixed*; in the former case there is more or less dilatation of the three tunics at once, without rupture or laceration of any. Sometimes there is only dilatation of the external or cellular tunic, with rupture or destruction of the internal or middle tunics; this has been styled *external mixed aneurysm*; whilst sometimes it is only the internal coat which is dilated, and escapes through a rupture in the middle coat.

Our author entirely overlooks the very important subject of inflammation of arteries, contraction or obliteration of these vessels, and next proceeds to consider the pathology of the venous system. The veins, he says, are also subject to peculiar diseases. Their vitality is, no doubt, rather low, for they are devoid of sensation, and one would be less in error in saying that they were passive than in predicating the same thing of arteries. In the next place the centre of the vascular system has much less influence on them than on the arteries. Still we not infrequently hear mention made of the venous temperament, of the venous constitution, of venous diseases of all kinds. They are capable of becoming inflamed, of passing into suppuration, and of thereby occasioning death; foreign substances also, when introduced into them and carried to the heart, soon kill, even things apparently of the greatest indifference, viz. a little atmospheric air, a small portion of cruer taken from any animal. In cases of venous inflammation, if the pus reaches the heart, it also proves fatal. They are capable of dilating and contracting to a high degree, so that their capacity for the mass of blood becomes very rapidly changed. Mere external warmth, muscular motion, the dependent position of a limb extends them, the opposite conditions produce great and rapid change in their calibre. But we cannot with perfect certainty estimate the consequences of all this with respect to the production of disease; we can only suspect them. They are sometimes locally distended, become swollen and form knots, small vessels on these knots often degenerate and assume the appearance of veins. Varix is accordingly more a disease of these than of the veins, which swell still more rarely than the arteries. So that there are spurious varices as well as spurious aneurysms, that is, if we give the name of true varices to those, where the venous trunks become swollen; these are almost as rare as true aneurysms, and almost all varices are spurious, viz. swelling of the small vessels with a conversion of the same into venous structure.

What share the veins take in the motion of the blood contained in

them, is not easily determined. The suction-power of the right side of the heart acts immediately on the blood of the cavæ; but does this suction-power also act on the small vessels? To this may be added the great irregularity of the motion in the veins, which is sometimes rapid, sometimes slow; namely, according to the variety of the muscular motion or rest of the body. The most difficult point of all to explain is the acceleration or retardation of the motion of the blood in the veins through mental emotions, which yet is so very striking, that fear or terror, for instance, as it were freezes the blood in the veins, and the open venous trunks, after such affections of the mind, do not pour out a single drop of blood, whilst joy or anger is capable of accelerating the stream of blood into the veins in a very high degree. It is certain that this effect is produced through the glanglionic nerves, but it is not probable that these nerves have no influence on the venous trunks, the veins being destitute of nerves. These nervous impressions may act immediately on the heart and arteries, and mediately on the small vessels; but this affords no satisfactory explanation of this phenomenon, so common and so well known, though still so concealed as to its cause.

The great variety of structure of the veins in several organs leads one to suppose that they will act very differently, and comport themselves very differently in disease, and experience fully bears us out in this supposition. The cranial cavity contains a venous system, to which none other is similar; contrary to the nature of all other veins, a provision has been made to render it entirely incapable of dilatation or contraction. It is therefore lodged in the tense dura mata, where this membrance is most immoveable. For this purpose frequent communications open from it externally, so that the current and passage of the blood goes on without any impediment, and pressure by extension on the brain is impossible. Thus has Nature in her wisdom protected the noblest and most important of her structures by surrounding it with a net-work of soft veins, which are capable of drawing off the blood from the cerebral substance, a thing which hard veins could not effect. However, if the return of the blood through the jugulars be impeded, the consequences are distress, stupor, redness or lividity of the face, and watery swelling of the eyelids. If, by repeated pressure of the blood on the brain through the abuse of narcotics, the diameter of the soft veins of the inner membrane becomes gradually dilated, this disposes to various diseases of the brain. With respect to the veins of the abdominal cavity, a different order of things presents itself from that of the other veins: they unite into one trunk, which, distributing itself to the spleen and liver, continues soft in the former, whilst in the latter it divides itself into branches, the membranes of which are almost as solid as those of the membranes of the sinuses, and resist all extension. These branches again collect themselves into one trunk, which opens into the inferior cava, from which the blood can reach the vena portæ just as easily as it runs from the latter into the cava. And this is the arrangement of this vessel, whence the circulation in the abdomen is much slower and more uncertain, than in any other part. Hence also the disposition to congestions of blood in the abdominal veins and in the spleen, the organ which admits the blood of the abdomen, when the liver is filled: hence the full state of these veins, in cases of threatening of suffocation, or after

death by suffocation, wherein the intestinal membranes are observed to be covered over with red spots; hence the proneness to hæmorrhages from the spleen and stomach. A number of phenomena, which persons are wont to refer to sanguineous repletion of the abdominal veins, have entirely different causes, viz. hæmorrhoids, gout, hypochondriasis, melancholy, &c.

The minute vessels constitute the most important part of the entire vascular system, in as far as the end of the whole system is the support of the vegetative process, and as this is peculiarly the business of these small vessels. It may be that the anatomist sees in them mere continued arteries, or mere beginning of veins, and is merely perplexed respecting the limits of both systems because he sees none; for the physiologist and pathologist there is a decided difference between these small vessels and arteries and veins. For to him the blood does not circulate for the sake of circulating, but in order that from it all the parts may be nourished, all the fluids may be secreted, which takes place neither in the afferent nor efferent vessels, but in the minute vessels. The physiologist and pathologist know that the small vessels have an influential atmosphere, and that they extend their power of sustaining vegetation beyond their physical limits, as, to use an obvious example, is clearly proved by the connection between the maternal and fœtal placenta. These find themselves at no loss concerning the limits of the arterial and venous systems; for they consider all the arteries to terminate gradually in small vessels, from which all the veins commence just as gradually. These minute vessels constitute with them a system entirely distinct from the afferent and efferent vessels, which has its own peculiar life, and also its own peculiar diseases. Their investigation is no doubt beset with considerable difficulties; for, as almost all the organs are composed of minute vessels, the diseases of these appear in fact as special forms of diseases of compound parts, and the promblem of the pathologist is, from the special phenomena to select those which appertain to the minute vascular system. The problem which we have now before us is, accordingly, to investigate to what forms of disease the individual organs are obnoxious, especially with respect to their vascular structure. Four points come here under consideration, *congestion, inflammation, hæmorrhages, spasm.* (Krampf.)

Once we have succeeded in establishing what inflammation is, it will appear how possible it is, that organs whose vessels are not demonstrable should however become inflamed; the crystalline lens is an instance of this. The serous membranes have vessels and become inflamed, *oftentimes* with increased effusion: vascular structure was for a long time denied to them, but their inflammation could not be doubted, and this must be always considered as effected by the minute vessels. The theory of congestion is difficult to be separated from that of inflammation, as both notions become clear only by comparison. The idea of congestion is in fact simple; if the blood accumulates in the minute vessels of any organ whatever, so that it dilates its vessels in diameter, and thereby occasions a change of colour and circumference of the same, without however producing any change in its normal state of vegetation, this state of things we call congestion. The words "without however, &c." must not be taken in too strict a sense: for certainly the secretion in such an organ is greater, and consequently the process of vegetation in it goes on differ-

ently from what it did in the state of health. But it maintains its original form, and the interchange of substances continues in it.

"Congestion is divided into arterial and venous, according as the accumulation of blood is occasioned by greater influx from the afferent vessels, or through impeded return through the efferent vessels. This division is important but not adequate; for there is a third species of congestion which depends on immediate irritation of the place in which the blood is accumulated. This irritation may be of a very various kind; *e. g.* mere nervous irritation, an idea which is reflected on a ganglion occasions it, just as a blush on the cheek of a person taken by surprise, or it is the consequence of a mechanical or chemical external action, as friction of the skin, the application of mustard," &c.

Here we have neither changed arterial nor changed venous action, and yet there is congestion. It is also justly divided into active and passive. In every congestion the extension of the vessels of the part where it is, is increased, but this increase may be a consequence of exalted action of the extending power, or else the effect of the diminished contracting power; the former is active, the latter passive. If, *e. g.*, parts swell from external cold, or if this occur after concussion, a fall, &c., it is passive congestions have occasioned this, with diminished contractility, and accordingly apparently exalted expansion without exaltation of the expansive power. All local irritations afford examples of active congestions.

But when the predominance of expansion over contraction so changes the vegetative process in an organ, that it swerves from its normal state not only in degree, but also in kind, and consequently the nutrition of the swollen structure continues no doubt, but with an essential change in form, we then pronounce it to be *inflamed*. Increased expansion is not merely confined to inflammation, as it may be even greater in mere congestion than in inflammation. Nor is a change in the vegetative process confined to it, as that may occur without any inflammation, as in the case of schirrhous, tumours, &c.; but it is essential to it, that the process of vegetation should be changed by predominance of the expanding power. Hence it at once appears, how the organs of vegetative life, which have neither nerves nor vessels, are yet capable of coming into a state analogous to inflammation, namely, by expanding and at the same time changing their vegetative process. It is possible, nay, it is even probable, that anatomy will at length succeed in demonstrating vessels in the crystalline lens, the only organ, which is inflamed, without having blood-vessels, just as it has succeeded in the case of serous membranes. The organs capable of the greatest expansion are the minute blood-vessels; consequently it is through them that inflammation is essentially effected. But as they every where stand in the closest connection and in a sort of antagonism with the vessels and nerves, the latter take a share in the inflammatory process, so that during it they are pressed and rendered tense by the organic substance in the part affected, and consequently must suffer in proportion as the inflammation increases. It is true that inflammation properly so-called is only possible where vessels and nerves unite into one structure; where this is not the case, we can only speak of a state somewhat analogous to inflammation.

Our author next proceeds to draw a line of demarkation between inflammation and congestion: congestion, according to him, is to be distin-

guished from inflammation, not by the degree of extension, for it may be very great in the former and very small in the latter, but by the change occurring in the plastic process. By this it is not asserted, that his process goes on perfectly normally in organs which are the seat of congestion; we must rather acknowledge that every change of action in the productive system is necessarily followed by change in the product, and accordingly that during the congestive state the organ must secrete otherwise than in the healthy state. But the product is only increased a degree, only inconsiderably modified; it still follows the same type, the same standard, which it followed in the state of health. But not so in inflammation; this changes the crasis, form, and action of the organ entirely. An example will explain the matter; we shall take it from the skin, the organ whose changes fall most under the cognizance of our senses. If the peripheric action of the vascular system be great, or if from violent muscular exertion the skin perspires, it becomes redder and warmer than at other times, it secretes much more copiously, nay more, the matter secreted is different in quality from that ordinarily given off. No doubt congestion of blood to the skin takes place, but the vegetative process of the same organ is not in the slightest degree affected; the skin remains skin; it continues to receive nutrition according to its usual type. But suppose, the skin is covered in any part with a blistering plaster, inflammation takes place on its surface, that is, in case of much less congestion, the relation of the plastic process between the skin and epidermis is changed; the latter disengages itself from the skin, and the interval is filled by a serous secretion. Or suppose, a phlegmonous inflammation of the skin itself takes place, the ordinary secretion of this organ ceases entirely, its substance swells, becomes loose, thick, deep-coloured, and in a few days the vegetative process is so much altered in it, that it is changed into the fluid form, and separates from the living part. * * * * * *

On the Degeneration of Muscular Substance our author says:—Degeneration of muscular substance takes place in the course of life in many ways. It is commonly said that through age alone it becomes hard and dry, but that is true only to a very limited extent; the cellular tissue, the membranes shrink much more in the course of years than muscles. But inactivity or disuse changes the muscular substance either into fat, whereupon motion then becomes entirely impossible, or it forms from the broad muscles mere membranes, and, from the long muscles, thin, shrivelled fleshy bundles. In a similar manner too violent exertion changes the muscle; the tendon increases gradually at the expense of the flesh, and the latter becomes harder, more torpid, and less fitted for motion. The very reverse of this torpidity we observe to occur many times, especially after diseases; the fibres of the muscle appear to go from one another, the cellular tissue connecting them seems to become more flabby and to contain a considerable quantity of serous fluid. If a muscle be divided in this state, serum exudes after the bleeding is over. In the case of animals fed under the care of man, this state of disease sometimes occurs unexpectedly: they then approach the dropsical state. Should this watery swelling be considered as exudation, the mistake will be obviated by the fact that no inflammation preceded. This state of the cavities or of the cellular tissue is not always preceded by dropsy, but yet dropsy seldom comes on without the muscles

being then affected. Individual muscular fibres often separate, become torn, connect themselves with others, and so give rise to pains, the causes of which are difficult to be traced. Steatomatose formations sometimes occur in it, as also hydatids, always however only singly, and oftener in animals than in man. What has been said here holds good only of the voluntary muscles.

The tendons hold a very low place in the scale of vitality: they never inflame, do not swell, do not become dropsical, take no share in the diseases of the limbs to which they belong till a late period, they withstand mechanical force in a high degree, and are scarcely capable of any other form of disease, than what they suffer through mechanical injuries. In such cases they do not swell, and they unite but imperfectly by cellular substance, which assumes considerable strength. Tendons may become ossified in old age.

We next come to the *Lymphatic System*. After considering this system anatomically and physiologically, he next views it in a pathological point of view. The lymphatic system is proved to stand at a very low ebb of vitality, a circumstance which no doubt must influence it more or less when attacked by disease.

Still the lymphatic vessels are susceptible of disease; they are liable to inflammation, and in that state are capable of exciting considerable pain. Poisoned wounds cause pain in the lymphatic vessels which have taken up the poison, and in the glands to which they lead. How acutely do not buboes pain, and the axillary glands in cancerous breast? The inflamed lymphatic vessels are sometimes seen to run along beneath the skin. Inflammation runs along them, as in all organs of low vitality, in a very tedious course, until it is dispersed or passes into suppuration, which occurs but seldom. The lymphatic glands, without any very remarkable degree of inflammation being perceptible, are capable of a great increase of size, the interior glands of the mesentery less than the exterior, which sometimes attain a really monstrous size, and retain it for a long time without destroying the individual. Still the mesenteric glands do reach sometimes a considerable size; in this case the diameter of the vessels conglomerated within them becomes dilated, and these glands are incorrectly said to be obstructed, as they are much more pervious than in the healthy state, as quicksilver injections reach such glands most readily. This swelling of the glands very frequently occurs in children, and then continues very often for the entire course of childhood, until the period of adolescence, when it disappears.

According to the writings of several pathologists, the lymphatic system is the seat of almost all those diseases usually referred to that state of the system connected with dyscrasia, and performs a very important part in the production of disease. But if we compare these assertions with the general properties of this system, according to which the lymphatic vessels take up everything presented to them almost mechanically, and want a central point to determine their action; as also with the phenomena themselves, from which it appears that their glands may be for many years in a state of disease, without the individual dying, though he may suffer more or less, especially in his nutrition; if we compare with this the un-

deniable facts that the most formidable poisons may remain for a long time in the lymphatic system, without occasioning any mischief whatever, but which will at once appear, if they reach the sanguineous system, considerable doubts must arise regarding the correctness of the assertions made by pathologists. The following facts are established:

a. The lymphatic vessels take in all kinds of morbid poisons from external nature, when they come in contact with them. On this, rests the possibility of inoculation, infection by the bite of a rabid animal, by impure coition, &c.

b. They also take up from the interior of the body poisons produced therein; *e. g.* from carcinomatous ulcers: secondary syphilis seems to arise in this way.

c. They are inflamed only by some poisons, not at all by others, sometimes by others, and the vital properties of the poison contribute nothing to this effect. They are never inflamed by rabid poison; this may lie in them for whole months, without producing an effect, and yet this is one of the most frightful poisons.

d. The lymphatic vessels do not work any change on the poison that has been taken in, they do not assimilate it, but let it retain the same qualities it had when taken. This third or last assertion may require confirmation, and here it is; if any morbid poison be taken up from any other body by the lymphatic vessels, it remains inactive and without exciting any phenomena, so long as it lies in the lymphatic system. Perhaps it may excite inflammation of the lymphatic vessel filled with it, or of the gland next to which it lies. But as soon as it mixes with the blood, it produces the same disease as that under which the person now yielding the poison had suffered, whether the poison may have tarried a longer or shorter time in the lymphatic system of the person now infected. Were it in the slightest degree assimilated, another form of disease would break out, but not the same as the poison had produced in the other.

These, says our author, are four undeniable facts, which are still further confirmed by a fifth, viz. that a quantity of poison rubbed into a wound and into the skin will injure, whilst in the stomach it is entirely innoxious, a proof that the lymphatic system has not the power of assimilation, whilst the stomach has. But the question now comes, whether notwithstanding this, morbid poisons may not be generated in the lymphatic system? The accurate investigation of this question is attended with considerable difficulty. No one denies that diseases, the result of dyscrasia, may arise and actually do arise from bad chylification, as is proved by gout, scrofula, and other diseases; but whether this bad chylification has its origin in the intestinal canal and its secretions, or only in the absorbing vessels of the same, whether the visible disease of the latter is to be considered as originally in them or as a consequence of the morbid state of the intestines, that is the question not easily answered.

In every case it is certain, that the entire state of the lymphatic system is very considerably changed in scrofulous disease; the glands are broken up; the diameter of their vessels becomes increased, and the external lymphatic glands more especially swell, often pass into inflammation and suppuration, and, whether as a cause or consequence of the entire disease still continues a question.

But if the qualitative changes in the action of the lymphatic system cannot be demonstrated with perfect certainty, and so the theory falls according to which this is considered as the principal source of the dyscrasiæ, yet it is certainly capable of quantitative changes in its action, nay it is at least extremely probable, that even an antagonism takes place between the lymphatic system of the intestinal canal and that of the rest of the body, whereby the former becomes more active, when the latter is less engaged, and vice versâ. Hungry persons, for instance, become more readily affected by infectious poisons, than persons satiated with food, and the dispersion of echymosis is promoted by purgatives and emetics. Absorption is much more active in youth than in adult age, especially that in the intestinal canal, whence, at least in part, arises the decline of nutrition in advanced years. The lymphatic vessels take no share in the diseases of the vascular system; they continue their functions uninterrupted in the midst of the most violent fevers, and according as the supply which should compensate the absorbed mass becomes diminished, they are the great causes of the emaciation which occurs in diseases of the blood-vessels. This want of participation in febrile diseases proves the low degree of vitality in the lymphatic system, if further proof were wanted.

We next come to the mucous membranes, the anatomical and physiological account of which we shall pass over for obvious reasons, and proceed to the pathological phenomena of this system, so far as it is an organ of secretion, or rather a system of secreting organs. Considered as such, the quantity of the secretion may first be at fault; it may be too copious, it may be too small, it may cease altogether. In the second place, the quality of the secretion may deviate from that which is natural, and in the third place, new organs may form for secretion in mucous membranes, or the relations of the parts of which mucous membranes consist may be so changed as to give the semblance of a new formation, the external appearance of the same assuming an unusual form.

The chief end of the secretion of the mucous membrane is obviously not the purification of the blood, nor the formation of a specific matter, nor the evacuation of any residue of parts which have reached the interior, but do not correspond to the purposes of life, but a sort of protection, which the mucous membrane finds necessary to its special destination as a mediating organ between the external world and the internal organism. The mucous accordingly compensates it for the want of the horny structure, which protects the skin, or it has it for the same purpose which this has for the skin. Only in some parts of this system, in the bronchial ramifications and the stomach especially, matters are somewhat otherwise, but then the secretion does not consist of mere mucus, and entirely different circumstances occur through the disturbance of these secretions, which appertain to the mucous system as such. Nay, we shall convince ourselves that the diseases of the stomach, bronchial system, and uterus, which depend on mere change of the mucous secretion, are of an entirely different nature and import from those which concern the proper secretions of these organs.

The quantity of the secretion of the mucous membrane is very unequal in the different periods of the life of man, and in certain individuals. In

infants it is rather copious. In a subsequent period of childhood the mucous secretion is always more scanty, until a few years after the commencement of puberty it attains its minimum, whence there is at this age a greater disposition to hæmorrhages from the mucous membranes, simply because these are less protected than usual from the impressions of the atmosphere. At a later age they again gradually, but slowly, become more copious, till at a more advanced period they increase considerably, especially in the genito-urinary parts of the system, where they give rise to catarrhus vesicæ. So it occurs with the generality of persons, but there are many exceptions, in which the mucous secretion continues copious during the entire of life. Not rarely have the temperaments of individuals been determined by these differences; thus, a man with copious mucous secretion has been called phlegmatic, one with a very small quantity, melancholic, a mischievous error no doubt, but the natural consequence of the vacillating import attached to the term temperament.

It is morbidly diminished by two entirely opposite causes, viz. by increased contraction in the vessels of the mucous membranes and inflammation of the same, also by increased expansion. The first cause produces the natural diminution of the secretion in the adult age. The child's body is more relaxed than that of the adult; expansion predominates over contraction, and so it then happens that the secretion of the mucous membranes decreases with increasing maturity, in which the quality of contraction always gain the upper hand. At a more advanced period the imperfection of the process of oscillation and the diminished capability to assimilate that which comes from without act so that those secretions increase which compensate for the diminished serous secretions, which are considerably lessened by age, and in this way we may account for the increase of the mucous secretions which then occurs. The increased contraction of the vessels of the mucous membrane also produces a dryness of the same, for want of juices and of supply. But the mucous secretion in the membranes does not entirely cease, if they are inflamed: the stoppage of the exchange of matter in the minute vessels then renders all secretion impossible. If the inflammation be shared with the cellular membrane, by which the mucous membrane is connected with the subjacent parts, it dies and then presents a thick, white, wrinkled mass, which gradually detaches itself. The mucous membrane does not pass into suppuration, but it sometimes becomes covered with pus, viz. when the inflammation becomes superficial. Then one of two things may happen; either the membrane, at first entirely dry, presents places, which altogether resemble excoriations of the skin, which are covered with a little thin pus, or it resumes again the office of secretion, but after an entirely different manner from before; instead of mucus it secretes plastic lymph. The mucous membrane can, in fact, suppurate only when ulcers form in the subjacent parts; these perforate it. Hence we never see, for instance, syphilitic ulcers in the urethra or vagina. But they are of frequent occurrence in the mouth and throat with destruction of the mucous membrane, but never in this same membrane, but in the muscular or glandular structures lying beneath.

Increase of the mucous secretion occurs much more frequently than its diminution; it is the necessary consequence of every irritant which pro-

duces congestion of blood in the minute vessels of the mucous membranes. And so acts almost every irritant, at least at the commencement; for though the mucous membrane is accustomed to the contact of external matters, yet by their constant action and greater change their influence must be felt quite differently, and accordingly produce on the action of their vessels as important and frequent changes as in their nervous action. Thus life manifests itself variously at various periods in the mucous membranes, consequently the influx of blood into their vessels, from which their dilatation follows, is constantly subject to increase and diminution. The first have an increase of secretion as a natural consequence. Cold produces such an increase, most rapidly even in the parts of the mucous membrane most exposed to it, in the nose, eyes, throat, and air-passages. Every one who goes into the cold will soon perceive this, by the moisture of his nose: the discharge which the cold produces, and the moist state of the eye, prove it. Cold also produces copious mucous secretion in the throat, witness the coldness of ice in Summer; it does less injury in the stomach, and in the intestines also, in which cold injections are often beneficial. But throughout the entire genito-urinary system of mucous membranes cold will not only prove very serviceable, but will even check the profuse mucous secretion, when it arises from other causes. Cold acts on the bladder, the genitals, and even on the stomach itself, as a very violent, unaccustomed stimulus on the sensible nervous surfaces, and its action on the vascular net-work of the mucous membranes does not promote the secretion; it rather exalts the entire vitality of the organ. On the contrary, in the air-passages and the eyes, it is a usual stimulus, which affects the nervous action less, and excites the secretion much more.

We shall defer further notice of this work till our next number. As far as we have proceeded in our analysis of it, we have no hesitation in saying that it approximates more nearly to our idea of what a work on General Pathology should be than any we have yet seen. The author is decidedly a pathologist of the anatomical school, and has accordingly produced a book replete with sound practical information, available in the diagnosis and treatment of disease as it occurs in every-day practice.

Periscope;

OR,

CIRCUMSPECTIVE REVIEW.

"Ore trahit quodcunque potest, atque addit acervo."

Notices of some New Works.

THE ANATOMY OF SLEEP; OR, THE ART OF PROCURING SOUND AND REFRESHING SLEEP AT WILL. By *Edward Binns*, M.D. 8vo., pp. 394. Churchill, 1842.

THIS is a Cyclopædia of all the curiosities—not of literature—but of phantasies fables, fanaticisms, deceptions, gullabilities, and Tom-fooleries, that have found record in books, and credence amongst the gobe-mouches, since the sleep of Damiens, on his bed of steel, down to that of Miss Okey, under the passes of Elliotson. Of our industrious author's credulity, it is sufficient to say that he declares him a complete convert to the truth of Mesmerism!! And for what purpose was all this toil, labour, and research in collecting chaff from the four quarters of the globe, and the four winds of the sky? to *communicate* the secret of the late Mr. Gardener, for the author of these 394 pages of small type makes no pretension to the discovery!! Now this secret was communicated to hundreds of people in this metropolis, and to ourselves among others—and a more arrant piece of humbug (always excepting Mesmerism) we never beheld or heard. The poor watch-maker of Belfast (Gardener) was driven to practise this piece of charlatanism—certainly a most innocent one—by the "*res angusta domi*," rather than from any intention of deluding his patients, for the purpose of supporting existence by precarious fees. Neither was the original inventor of "Sleep at Will" able to apply the secret to himself at all times. While attending him professionally in Regent-street, we knew that he passed many a night without sleep; and as for ourselves, we have tried the panacea over and over again, without any other effect than that of invariably preventing sleep while putting the process into operation. Although we refused to give any pledge of secrecy, and assured Mr. G. that we would hold ourselves free to try the experiment on some of our patients, he nevertheless forced it on us, and in no one instance did we succeed in putting any one to sleep by the hypnotic procedure. But lest our readers should burst with impatience, we shall deliver up the grand secret at once.

"Let him turn on his right side, place his head comfortably on the pillow, so that it exactly occupies the angle a line drawn from the head to the shoulder would form, and then slightly closing his lips, take rather a full inspiration, breathing as much as he possibly can through the nostrils. This, however, is not absolutely necessary, as some persons breathe always through their mouths during sleep, and rest as sound as those who do not. Having taken a full inspiration, the lungs are then to be left to their own action—that is, the respiration is neither to be accelerated nor retarded. The attention must now be fixed upon the action in which the patient is engaged. *He must depict to himself that*

he sees the breath passing from his nostrils in a continuous stream, and the very instant that he brings his mind to conceive this apart from all other ideas, consciousness and memory depart; imagination slumbers; fancy becomes dormant; thought subdued; the sentient faculties lose their susceptibility; the vital or ganglionic system assumes the sovereignty; and, as we before remarked, he no longer wakes, but sleeps.

"This train of phenomena is but the effort of a moment. The instant the mind is brought to the contemplation of a single sensation, that instant the sensorium abdicates the throne, and the hypnotic faculty steeps it in oblivion."

Now mark the ingenuity, or rather absurdity, of fancying the impossibility of *seeing* his own breath—and that, too, passing in a continuous stream *from* the lungs!! Yes. We can conceive that, when a person brings himself to fancy such an impossibility as this, "the sensorium abdicates its throne, and the HYPNOTIC FACULTY steeps it in oblivion." Why, this gibberish equals any that is employed to convey the mummeries of Mesmerism! or the jargon of the "unknown tongues."

Near the conclusion of this most strange volume, our author tells us that he can see nothing in the human organon to prevent the possibility of "lengthening life by artificial means to *an indefinite period*," and, if so, "it must be by the subjugation of the cerebral organs to the FACULTY of sleep." True, most confiding doctor—but this will be the SLEEP OF DEATH.

After all, there is probably something in the book of a hypnotic character; for, a perusal of some twenty pages of the volume, while lounging in our arm-chair, after dinner, produced such a comatose sleep, with stertorous breathing, that our servant burst into the room fearing we had fallen into a fit of apoplexy. In this character we recommend the volume to our professional brethren, as preferable to morphine or even henbane. But to the ignorant its perusal will render wakefulness more wakeful by the wondrous stories that are related, and the *excerptæ* from all that has been written "*de omnibus rebus et multis aliis*," from the sacking of Troy to the destruction of the Caisson on the Goodwin Sands.

ESSAYS ON DETERMINATION OF BLOOD TO THE HEAD. By *Robert Hull*, M.D., &c. &c. &c. 8vo. pp. 154. Churchill, London, 1842.

There is nearly as much of Greek and Latin in this volume as of English; nor, can we always commend the style and the tone of the latter. In his address to Sir Henry Halford, he indulges in the following invective.

"Behold the reason, why, in these days of physical philosophy and natural history, the College has been malignantly opposed!

"The agitators, in the completeness of their anæsthesia, cannot appreciate any virtues, save what are to be acquired at lectures, exhibitions of mechanism, or the galleries of musea.

"They feel their inferiority to men, who are *disciplinis veteribus instructi, in libris versati, hominum eruditorum sermonibus locupletati*; and they vent splenetic obloquies."

Dr. Hull, so well instructed "disciplinis veteribus," and so great a stickler for Christian precepts, ought to have remembered that men's *motives* can only be known to themselves and their God, and that they should be judged by their *actions*, solely. Now several of these "agitators" were the most prominent of the reformers, and yet they have been gathered into the College as FELLOWS. What will these say to the anathema of Dr. Hull, who accuses them of ma-

lignancy, hatred, malice, envy, and all kinds of unworthy motives and passions!!*

What would Dr. Hull, himself say, if we followed his example in imputing *motives*, and averred that all this buttering of the College was neither more nor less than *fishing for a Fellowship*. Yet such an assertion would not be a whit more uncharitable to him than his accusations are to the reformers.

The author is a determined anti-reformer, and has almost a horror of bloodletting. We daily see the mischief of incautious phlebotomy; but we also daily witness the injury caused by neglect of early and efficient depletion. It is impossible to lay down the happy medium between the two extremes. The via tuta can only be found and trodden by observation and experience at the bedside. The phrase "determination of blood to the head," though often used by the professional man, for the purpose of explanation to the patient, has long been exploded by physiologists. By what possible power can the heart determine or direct the stream of blood to any one organ or part, in preference to another—to the brain rather than to the liver or spleen? The supposition is perfectly absurd as well as unfounded. The abnormal fulness of blood in an organ, as the brain, is caused by the state of vessels or tissues in that part, and not on any determination to the viscus. The subjects treated of by Dr. Hull, in this little volume, are very multifarious—but not always handled in a grave, though generally erudite manner.

We can only cull out a specimen or two of Dr. Hull's manner; and it is by no means an unfavourable one.

Teatotalism.

"That temperance will prevent the plethoric headache, every body knows. To practise is the difficulty. Is more than temperance required in drink? Is the modern system, vulgarly yclept 'Teatotalism,' the true, the salutiferous?

"The watery sect deserves great praise, statistically, nationally considered.

Αριστον μὲν ὕδωρ.

"But, in a therapeutic treatise, the question is, not how to reclaim drunkards, but how the healthy, sober man will best preserve his health? Whether by the drinking of water, or of stimulant fluid in moderation?

"The majority of medical philosophers have decided for temperance, not abstinence. The majority of, after all, a learned body—learned in *Nature*. They are prepared to forbid wine to the reckless, who know not where to stop; but for the man, mentis compoti, they think the stimulant liquids, used with caution, innocent, even useful.

"It has been asked, whether the world would not have been better without the use of stimulant drink?

"I would answer this question in morals by another, put by that great and good philosopher, whose intellect was as piercing, as his heart was devotional—whom to *read*, at the expiration of eighteen centuries, is to love with the ardour of personal friendship; whom to meet hereafter is the wish and creed of every *Christian*.

"*Terra vero fœta frugibus et vario leguminum genere, quæ cum maximâ largitate fundit, ea ferarumne, an hominum causâ gignere videtur? quid de* VITIBUS *oliretisque dicam? quarum uberimi lætissimique fructus nihil omnino ad bestias pertinent. Earum omnium rerum* HOMINUM *est usus et cura*"—Cicero.

Throughout this essay are scattered a great number of useful hints, and judicious reflections—not unmixed with some pedantry, dogmatism, and occasionally, even, a spice of the extravagant. Thus, speaking of insanity, the doctor observes:—

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* Was the great reformation in the College itself a sign that opposition to it was either malignant or useless?

"The marvel is, that every body who has *time* to think, does not run mad! In this unfathomable universe, whether viewed with the eye astronomical or microscopic, the awful so predominates, that *not to be mad* seems a special proof of the grace of God; or of a natural hebetude of soul."

To this the doctor adds, the "dogmata of the Calvinistic School," which inculcates that a *few* are selected, "for no virtues but to show the irresistibility of their Maker," and the rest are to be damned, whether virtuous or wicked, for the same purpose of showing the benevolence of the Deity! There is no doubt that these gloomy, not to say impious, tenets drive many weak minds mad every day. It is only astonishing that people of any intellect or reflection could entertain such degrading ideas of the Omniscient, the Omnipotent Author of our existence and Governor of the Universe!

THE PRESERVATION OF THE HEALTH OF BODY AND MIND. By *Forbes Winslow*, M.R.C.S, Author of the Anatomy of Suicide, &c. 8vo. pp. 202. Renshaw, Strand, 1842.

THIS work consists of twelve Chapters—on Cold—Physiology of Death—Malaria—Longevity—Sound—Art of being Ill—Wandering of the Imagination—Diet—Asphyxia—Mental Philosophy—Mental Influence in the production of Disease—Early Indications and Treatment of Insanity. Under each of these heads Mr. Winslow contrives to introduce a great variety of miscellaneous matters, more or less directly bearing on the main object of "PRESERVING HEALTH," but interspersed with incidents and reflections considerably beyond the horizon of the title-page. These last, however, being written in a very pleasing and even captivating style, and containing very interesting or amusing matters in themselves, will probably be read with as much avidity by the public as any other portions of the work. These, at the same time, cannot come within the limits of a review, and therefore we must select a chapter or two for notice, and for the sake of exhibiting specimens of our author's matter and manner.

The curious title of the sixth Chapter—"The Art of being Ill," arrested our attention, and we read it through most carefully. It is remarkable that the whole of it is occupied, not with the "art of being ill," but with the art of curing or alleviating disorders through the medium of the mind. It is on this account that Mr Winslow most seriously urges medical men to make themselves well acquainted with the philosophy of the mind, or, in other words, with metaphysics. Alas! the great body of medical students have little time for metaphysical inquiries during attendance on the crowded curricula prescribed for them, and when they enter into practice (if they can get any) the "*res angusta domi*" on one hand, or the drudgery of their profession on the other, leaves them little time for metaphysical studies. But after all, where were metaphysics, or the science of mind learnt? During intercourse with mankind. And where can there be a better field than that which is presented to the medical practitioner? He daily mixes with people, some of whom are sick—some well—all agitated, more or less, by emotions of mind. He has just as good an opportunity for studying the mind as the body—and the fact is, that two of our greatest metaphysicians (Locke and Brown) were physicians. Still we are obliged to confess that our greatest medical metaphysicians were very far from being the ablest physicians. Very few, we believe, trusted their health or bodies in the hands of Locke or Brown. We apprehend that John Hunter, Astley Cooper, John Abernethy, and others that we could name, were very sorry metaphysicians. The late Dr. Armstrong considered metaphysics as little else than a jargon in which we wrangled

about, of which we knew nothing. Our author, however, and several distinguished modern physicians, entertain a very high opinion of the value of mental philosophy, and, as we are very far from wishing to underrate its importance in the study and practice of physic, we recommend the work of our author to the perusal of his professional brethren.

It is to the last chapter of this volume that we shall more particularly devote our attention; but we regret to say that rarely have we met with a publication so difficult of analysis as this of Mr. Winslow. It is so pregnant with quotations and opinions from other writers, that we are bewildered at every page, as to the construction of a continuous line to travel by, or adhere to.

THE FIRST INDICATIONS, AND EARLY TREATMENT OF INSANITY.

In this chapter our author considers it necessary to "demonstrate" the following points—

"1. The brain is the material organ of the mind.
"2. Insanity is invariably the consequence of bodily disease.
"3. On the application of the general principles of pathology to the diseases of the brain.
"4. Insanity is not a specific affection.
"5. On the importance of early treatment.
"6. Causes of insanity, insidious and apparent.
"7. On the early physical symptoms of insanity.
"8. On the early mental symptoms of insanity.
"9. Physical treatment of the incipient state.
"10. Mental treatment.
"11. On the influence of the will over the affections of the mind."

There was a time—perhaps it is not quite past—when insanity was considered a disease or disorder of the *mind* exclusively, and that physical derangement had nothing to do with the malady. This doctrine led to the most puzzling and unsatisfactory definitions of the disease.

"The natural result of this was, that medical men entirely overlooked the consideration of the early or incipient stage of insanity, for derangement was never admitted to be present until it had obtained a certain degree of development. In fact, insanity was not recognised until the affection assumed an undisguised and unmasked character. Even at the present time this mode of investigation is adopted by a few physicians who devote their attention peculiarly to this class of affections, and with the most unhappy results. It requires but little sagacity to pronounce an authoritative opinion with respect to the presence of insanity when the mental impairment is obvious and apparent to the most superficial observer; but the difficulty consists in detecting the early and delicate shades of insanity before the delusion becomes perfectly evident."

At present, it is generally admitted that the brain is the seat of the disease, as it is the organ through which MIND manifests itself. It will be still more intelligible if we look at it in this light. The manifestations of mind are the functions of the brain—and we know that all functional disorders begin insidiously, and often go on for a long time before organic changes are produced. Thus the secretion of bile is the function of the liver, and this secretion may long be in a disordered condition, before organic disease becomes manifest in the organ itself. No one would dream of thinking that bilious disorder was merely disorder of the bile itself, without having its cause in the organ which secretes that fluid.

"Having satisfactorily proved, that in every case of insanity the brain is the seat of the disease, the next question to consider is, whether the general principles of pathology which are had recourse to, with the view of elucidating the diseases of other organs, are not applicable to the brain and its disordered manifestations?

It is fallacious to suppose insanity to be a *specific* affection invariably exhibiting the same identical characteristics; like other organic diseases, it assumes many aspects, and has also an early as well as an advanced stage. The eye, the lungs, the stomach, the heart and liver, are subject to a number of affections, in all of which the peculiar function which each organ is destined to perform is obviously disordered. In every disease of the eye the vision is more or less obstructed; in every disease of the lungs the respiration is interfered with. The lungs may be inflamed, may be ulcerated, be hepatised, or effusion may take place within its substance; and in all these dissimilar disorders the breathing is manifestly deranged. How impossible would it be for us to embody within one definition all the symptoms which result from so great a variety of pulmonary diseases? The brain, like the lungs, liver and heart, is subject to a multiplicity of affections, in all of which the mental faculties are more or less affected; and yet, in investigating the phenomena of its diseases, we are influenced by principles totally at variance with those which direct us in the study and treatment of other organic maladies."

When *legally* considered, we must wait till insanity be fully developed, before we can sign a certificate or incarcerate a maniac. But *medically* contemplated, we must watch the first symptoms of mental alienation, and consider them as indicative, of incipient disorders of the brain itself, and treat them accordingly. "If the patient be neglected at this period of the attack, incurable mental derangement may result." In some institutions seven eighths of recent cases have been cured.

But we cannot follow our author through all the divers illustrations of the symptoms, causes, nature, and treatment of incipient insanity The work must be read, and cannot be either analyzed or epitomized. It will be a very popular work—especially among general readers—and not less popular than useful.

TREATISE ON THE OLEUM JECORIS ASELLI, OR COD LIVER OIL, AS A THERAPEUTIC AGENT IN CERTAIN FORMS OF GOUT, RHEUMATISM, AND SCROFULA; WITH CASES. By *John Hughes Bennett*, M.D., &c. 8vo. pp. 180. Highley, 1841.

WE cannot account for this little work having so long escaped our notice; for it is a very meritorious brochure, evincing great assiduity and research in the collection of materials scattered among a vast number of German and other Continental modern publications, respecting an article which promises to prove an important therapeutic agent in many complaints. The remedy is plentiful, easily prepared, and very moderate in price.

The cod-liver oil, though occasionally used in practice, and mentioned by British writers, has never come into that general use here which it has experienced in Germany. Drs. Barton, Percival, Darbey, Bardsley, and others, have recommended and employed it, especially in old rheumatic pains; and it appears that, some fifty years ago, fifty or sixty gallons of it were annually consumed in the Manchester Infirmary. Dr. Bardsley, in 1807, reports that "this medicine has preserved its reputation, unimpaired, in our Infirmary during the period of thirty years."

In 1822, Dr. Schenk, of Siegen, published a memoir on this subject, in Hufeland's Journal, and gives a series of very obstinate cases of rheumatism cured or relieved by the cod-liver oil. Subsequently, the same author wrote a memoir in its favour for rickets. Since that time, the employment of that remedy in Germany, has been very extensive, and numerous memoirs have appeared on the subject. It has now obtained a place in the Pharmacopœias of Berlin, Hanover, Saxony, &c. &c. More recently it has been employed in France and Belgium;

nd still more lately, has been noticed by Drs. Thompson, Hall, Donovan, and hristison, in this island.

' The natural and commercial history of this medicinal agent we must pass over, hough minutely detailed in the second Section of the work before us. In the hird Section our author takes up "the Action of the Cod Liver Oil on the Human Economy."

Carron du Villauds records the following physiological effects, as experienced n his own person, after a dose of the oil:—"A very nauseous taste not easily to e removed, somewhat resembling that of putrid fish; further, a biting sensation n the throat, in conjunction with the secretion of an adhesive saliva; which symp- oms were more vehement in proportion to the impurity of the oil. The eructation f a nauseous gas continued some time after taking the dose. There followed colic pains, then light stools, together with an increased secretion of urine, both secre- tions possessing the characteristic smell of the oil."

Such effects, however, are not so violent in the generality of persons who take the medicine, and they vary much, according to the temperament and condition of the individual. People soon get reconciled to it, though certainly it is some- what nauseous at first. The Laplanders, and even the Shetlanders, use it exten- sively as an article of diet. Dr. Bennett himself does not think it more disagree- able than castor oil, and not nearly so much so as bals. copaiba. Brefeld exhibited the medicine to upwards of a thousand people without any injurious effects. This statement, however, must be taken cum grano salis; for where there is plethora, or inflammatory diathesis, the oil is hazardous. It seldom acts much on the bowels; but it has been found to prove emmenagogue in many in- stances.

It is supposed to have a beneficial influence on the genital organs, when their functions are impaired; but it is in obstinate cases of gout and rheumatism that its reputation has chiefly rested, as also in scrofula.

"The MODUS OPERANDI of the oil may be said to consist in stimulating the lym- phatic glands and vessels, and by these means increasing the activity of the capil- lary system. By its action on the former the process of assimilation is facilitated and the appetite increased. The quality of the blood is thus improved, and so, lastly, the different organs and structures of the body become better nourished, and receive more *turgor vitalis*."

There is a considerable portion of iodine in the yellow and brown kinds of the oil, and hence, perhaps, some of their medicinal virtues.

In respect to dose, one or two table-spoonfuls of the oil may be given to an adult twice or thrice a day—the dose to be proportionably lessened according to age. Brefeld recommends it to be given with a little powdered sugar as the best cor- rective of the disagreeable taste. Dry biscuit answers the same purpose. A cup of coffee after the dose removes the unpleasant flavour. It should not be given in the morning fasting, as it is then more likely to disagree. About an hour after a light breakfast, is the best time, and again in the evening, after the dinner is di- gested. The genuine brown or yellow cod liver oil is to be used only.

RHEUMATISM AND GOUT.

Dr. Kay, of the Manchester Infirmary, was the first in this country to employ the remedy in question in the above diseases, as the following passage in Perci- val's Essays will show.

"A woman who laboured under the most excruciating rheumatism, and was an out-patient of this infirmary, being advised to rub her joints with the oil, was induced to take it at the same time internally. A few weeks restored her to the use of her limbs, and she was cured. However, little attention was paid to this case, as it was supposed that the alteration of the weather, and the medicines she

had before taken, had caused the cure. About a twelvemonth afterwards, her complaints returned with double violence, and the same remedy restored her to health again. Encouraged by this second recovery, Dr. Kay, one of the physicians to the infirmary, prescribed it for other patients, in similar cases; and it answered his most sanguine expectations. Since then it has been used by the other physicians with the greatest success."

Dr. Percival himself bears testimony to the efficacy of this medicine in various maladies which had resisted other plans of treatment. Dr. Bardsley, in 1807, speaks of it as a medicine of "efficacious but limited powers."

It is curious that, norwithstanding this respectable testimony, the remedy appears to have died a natural death in this country, though it was resuscitated in Germany, by the pen of Schenk, in two memoirs, where he has extolled the oil "as a specific in gout and rheumatism."

"It heals all chronic and painful affections of the human body, wherever they are seated, whether internal or external, if they have originated in rheumatism or gout, as surely and as certainly as bark cures intermittent fever, or mercury the venereal disease."

Memoirs innumerable *after* those of Schenk, were published on the Continent, —"and at present its use in these diseases is universal in Germany." There is a good deal of conflicting evidence, however, on this point, and our author makes the following remark:—

"Judging from the mass of observations which have now been published in the different German periodicals, and from what I have heard and seen connected with this subject, I am inclined to consider that the cod liver oil is more especially indicated in three distinct forms of chronic gout and rheumatism, which may be denominated the general, erratic, and local forms."

On each of these forms Dr. Bennett makes some judicious and discriminating observations, for which we must refer to the work itself. A great mass of cases of various diseases treated by the cod liver oil occupies the remainder of the volume, and these—indeed the whole of the treatise, we most strongly recommend to the attentive perusal of our professional brethren. The book is characterised by candour, discrimination, modesty and judgment.

THE THEORY AND PRACTICE OF MIDWIFERY. By *Fleetwood Churchill*, M.D. M.R.I.A., &c. Illustrated by upwards of 100 Wood Engravings by Bagg. London, 1842. Renshaw, pp. 479.

THIS is surely the age for treatises on Midwifery. Within the last eight or ten years we have had works on the subject by Dr. *Ramsbotham*, Dr. *Blundell*, Dr. *R. Lee*, Dr. *Rigby*, &c., all excellent in their way, and every one of which, we believe, has met with very fair encouragement from the profession. This circumstance alone shows how much more highly this branch of medicine is esteemed, and how much more zealously it is now studied, than it used to be twenty or thirty years ago. It was long a disgrace to our corporate Colleges of Physicians and Surgeons that they did not even allude to midwifery as a requisite branch of medical education on the part of the candidates for their diplomas. Fortunately a better state of things now exists, and young men are not, in the present day, sent abroad or to the provinces of our own country to practice the healing art, without perhaps having ever attended a single woman in childbed.

Of all the works recently published, none seem to us to be better suited to the wants of the student than the present one by Dr. *Churchill*. The volume is altogether admirably got up, and does great credit to the publisher as well as to the talented author. The type, although small, is most beautifully clear, and, as there are nearly 500 pages of close print, the reader can imagine what amount of

information is contained within the compass of a neat duodecimo volume. It is almost unnecessary to say that the wood engravings by *Bagg* are good; most of them are capital, and will greatly diminish the student's labour in fully understanding the mechanism of parturition, whether regular or irregular.

Dr. *Churchill* has done his part remarkably well upon the whole. The only fault that we can find with his descriptions is, that he too often details the opinions—in many cases unfortunately conflicting—of different writers, instead of distinctly giving the results of his own observation and experience. In a manual upon any practical subject, the great aim of the author should be lucidly to explain what the young practitioner is to do, and how he is to form his judgment when called upon to act for himself. The collating of many authorities, especially when the practice recommended by them is very different, serves only to bewilder and mislead. We were especially struck with the truth of this in looking over the chapter on puerperal fever. It is far too elaborate in a literary point of view, and looks like a compilation rather than a didactic essay. In the chapters also on instrumental labour, we missed in many passages a certain tone of decisiveness, so to speak, in the practical instructions, that constitutes one of the great attractions of *Blundell's* writings. For example, in his description of, and remarks on the long forceps, it is not easy to discover whether Dr. C. approves of its use or not. It is an instrument that is now very little used; and certainly the less the better. If the detention of the head at the inlet arises from a mechanical impediment, no good to the child, and certainly much evil to the mother, will be caused by any attempts to bring it down by artificial means; and on the other hand, if it arise from merely deficient expulsive energy of the uterus, there are many other simpler means which the prudent accoucheur will have recourse to, and which will very generally prove successful.

With the exception of a few such blemishes as these, the work under notice deserves very high praise; it cannot fail to be acceptable to the student, and may often be consulted by the practitioner with great advantage. We select one or two specimens, to show the style of the author and his mode of treating his subjects.

Ordinary Duration of Pregnancy.

The usual term of gestation in women is about nine calendar months and one week, or forty weeks, or 280 days, allowing a slight variation either way. This period, it is well known, may often be considerably shortened, and this too without great detriment to the child: but does the converse ever hold true? is the duration of pregnancy in the human subject ever considerably prolonged? There has been the greatest difference of opinion on this subject among the leading accoucheurs of this country in the present day: "Drs. Gooch, R. Blegborough, Davis, Sir C. M. Clarke, and Mr. Pennington, discrediting protracted gestation, and Drs. Granville, Conquest, Blundell, Merriman, Power, Hopkins, &c. advocating its possibility.

"Dr. Dewees remarks, 'I have had every evidence, on this side of absolute proof, that it has been prolonged to ten calendar months, as an habitual arrangement, in at least four females; that is, each went one month longer than the calculations made, from an allowance of ten or twelve days after the cessation of the last menstrual period: and from the quickening, which was fixed at four months.' Professor Desormeaux relates a case of a lady whose pregnancy lasted nine months and a fortnight. The late Professor Hamilton, of Edinburgh, declares his 'solemn conviction, that he has met with at least twelve cases, in the course of practice, where there could not be the shadow of doubt of the protraction of human pregnancy beyond the ordinary period.' M. Velpeau has recorded nine cases of the kind.

"To these authorities may be added the names of Hervey, Smellie, Zacchias, La Motte, Le Roi, Le Bas, Foderè, Capuron, Gardien, Murat, &c.

"Dr. Montgomery relates two cases in his work, one of which came under my observation; in the first, the gestation continued two hundred and ninety-one days, and in the second, forty-one weeks and two or three days at least. I have referred to some of the cases on record, because, the question being chiefly one of authority, positive evidence must infinitely outweigh mere negation.

"An additional argument has been deduced from the irregularity of the period of gestation among cattle. According to the researches of M. Tessier: out of 160 cows, 14 calved from 8 months to 8 months and 26 days; 3 at 270 days; 50 from 270 to 280 days; 68 from 280 to 290 days; 20 at 300, and 5 at 308 days; the extremes being thus 67 days apart. Of 102 mares, 3 foaled on the 311th day; 1 on the 314th: 1 on the 325th; 1 on the 326th; 1 on the 330th; 47 from 340 to 350 days; 25 from 350 to 360; 21 from 360 to 377, and 1 on the 394th day; the extremes being 83 days. With sows, the extremes were 15 days: and with rabbits (out of 139 cases) 7 days."

Dr. *Churchill* himself leans to the latter of the two opinions: viz. that gestation may be protracted for some time beyond the ordinary period, and quotes the very sensible remark of his friend Dr. *Montgomery* that, we "cannot imagine why gestation should be the only process, connected with reproduction, for which a total exemption from any variation in its period should be claimed."

Induction of Premature Labour.

The following summary of the various methods of performing this necessary, though highly responsible, operation, will be read with interest.

"1. Abdominal frictions, and manipulation, with warm baths, &c. have been advised, but they very rarely succeed, their supposed advantage being the absence of unnecessary irritation.

"2. Separating the membranes for two or three inches around the os uteri, will frequently bring on labour; and at this is the closest imitation of natural labour, it has been preferred by many. Dr. Hamilton remarks, 'that he is now convinced, from the experience of the last ten years, that if there be a sufficient portion of the decidua separated from the cervix uteri, there is no occasion for the introduction of the open male catheter, *i. e.* for puncturing the membranes. Dr. Conquest considers it as effectual as the other methods, and much safer for the infant, as saving it from pressure during the pains. If it fail, we can still have recourse to the third plan.

"3. The membranes may be ruptured, either directly or obliquely. For this purpose Wenzel, Ritgen, Klugè, and others, have invented appropriate instruments; but a female catheter may be used, or a piece of wire, or a canula having concealed within it a spring trocar. Care must be taken to wound neither the mother nor child.

"This plan was adopted in Mampe's and Spoendli's cases; in 36 of Dr. F. H. Ramsbotham's—(of these 21 children were born alive, and 19 ultimately lived); and from its greater certainly, it has been preferred by most practioners.

"4. MM. Brünninghausen and Klugè have proposed and practised, with great success, the dilatation of the os uteri, by means of a piece of sponge placed within it, and maintained there by a plug in the vagina."

(*Velpeau* gives a decided preference to the use of the plug: he says that the irritation so produced is not only more certain, but is also more permanent, progressive and regular, than by the use of any of the other methods.)

"5. Ergot of rye is now pretty generally supposed to have the power of originating uterine contraction, and if this be the case, it will probably be found to be the most effectual and safe mode of inducing premature labour, because we can preserve to the child the safeguard of the liquor amnii, which is of the greatest importance.

Dr. F. H. Ramsbotham has mentioned many cases in which it was tried for this purpose. Labor was brought on by its use alone, at the seventh or eighth month, in twenty-six cases, without interfering with the membranes of the os

teri. All the mothers recovered, and 12 of the children were born alive, and 14 still-born. Of the 12 born alive, 4 only survived for any length of time.

"Dr. Paterson of Glasgow, and Mr. Heane of Gloucester, succeeded by this means.

"Mr. Corry and Dr. Lee tried it but failed.

"Although the medicine appears successful as regards the induction of labour and the consequences to the mother, yet the proportion of children lost is greater than by the other methods; and this must be a serious objection to its use, when the pelvis will admit the passage of a viable child."

"An interval, varying from twenty-four to ninety-six hours, generally elapses after the operation, before uterine action commences, which it does sometimes by shivering and feverishness. 'Great disturbance in the nervous system,' says Dr. Hooch, 'is produced by it: severe rigors, rapid pulse, and delirium, are the occasional consequences; but these symptoms, proceeding from nervous irritation, do not continue long enough to produce any serious consequences.' In many cases these symptoms are altogether absent. The patient will require the same management as after ordinary labour. It will be advisable to have a nurse in readiness, to supply the infant with its natural nourishment, until the mother shall have milk for it."

MANUAL OF THE DISEASES OF THE SKIN. From the French of MM. Cazenave and Schedel; with Notes and Additions. By *Thomas Burgess*, M.D. Renshaw, 1842.

THIS is an extremely useful little work, and one which we can safely recommend both to students and medical practitioners. It is founded on the experience of M. Biett, well known during his life as a high authority on cutaneous diseases. The classification adopted is that of Willan, being based on the elementary characters of the disease; certain modifications, however, are, and in most instances with propriety, introduced.

The first, or introductory chapter, affords some very useful hints on the general characters and management of their diseases; the remarks on *diagnosis* are especially deserving of notice.

The chief point is to determine the elementary lesion; we have then merely to compare the disease with the few which possess the same elementary character.

If the elementary lesion is unaltered, we have only to determine the order to which it belongs, and this is usually not difficult; we have then to determine the species, and in this we are aided by the form, seat, &c., of the eruption.

"For example, a patient has, on the inner side of the arm, between the fingers, &c., a number of *small collections of serum*, distinct, accuminated, transparent at the point, and accompanied by itching, &c. On carefully examining, we find that the elevations contain no pus, that they are not solid and resisting, that they are not papular eminences covered by a scale, nor an injection of the skin which disappears under pressure; the disease is therefore *vesicular*. We have then to find out to what species of vesicular affection it belongs. It is neither *miliaria* nor *varicella*, which are accompanied by constitutional symptoms; it is not *herpes*, for in herpes the eminences are collected together in groups; it must therefore be either eczema or scabies; but it is not eczema, for the vesicles of eczema are flattened, while here they are accuminated; *ergo*, it is scabies."

In many cases, however, the elementary character has become lost, and the secondary form presents itself. Thus the fluid of a vesicle may disappear, and leave a small incrustation, a postule may be converted into a scab, and the latter give way to an ulcer; it is necessary, therefore, that we should be acquainted with these secondary forms, and be able to refer them to their primary states. Incrustations may succeed vesicles, scabs to postules, and ulcers follow impia, &c.

"In cases like the foregoing, we must first ascertain the nature of the secondary lesion, then determine its corresponding primary element, and finally pursue the course just pointed out. For example, a patient comes to us with a disease of the skin, characterised by thick, rough, yellow scabs, which cover a large portion of the extremeties, especially the legs, and when they fall off expose superficial excoriations; the latter discharge a purulent secretion, which dries up, and forms fresh scabs, these being the most characteristic features of the disease. Now it is easy enough to tell at once that this is a pustular affection, but not so easy to determine its species. The disease is evidently neither *variola* nor *vaccinia*; the pustules of *ecthyma* are large, isolated, and frequently covered by black, tenacious scabs, which end in ulceration; it is neither *acne* nor *mentagra*, the pustules of which rarely ever give rise to scabs. The only affections, then, that remain are *impetigo* and *porrigo*, and we have merely to compare the character of these two species in order to decide. It is unnecessary to enumerate here the signs by which we know that the disease is not porrigo; it is therefore impetigo, and as the scabs are scattered irregularly over the limb, it is *impetigo sparsa*."

It is true, that we may not be able always at once to discover the nature of the disease in this way, but still we shall be greatly aided in our diagnosis; at the same time we must neglect nothing which can assist us, as the seat, form, colour, of the eruption, its progress, &c., signs which at once strike the experienced eye, and enable us to dispense with details.

As a specimen of the manner in which the various diseases are treated, we shall transcribe the article upon Ecthyma.

ECTHYMA.

"SYN.—*Phlyzacia; Agria; Scabies fera; Furunculi atonici.*

"Ecthyma is a disease of the skin, characterised by large round phlyzaceous pustules, almost always distinct, and seated upon a hard inflamed base. These pustules are succeeded by thick, dark-coloured scabs, which leave slight superficial cicatrices behind them, or more frequently, red stains which disappear after a certain time. This eruption may appear on every part of the body, more especially on the neck, the shoulders, the buttocks, the extremities, and the chest. The pustules are seldom developed on the face or on the scalp. Although they are generally distinct from each other, they may, however, spread over a large surface, even over the whole body, but they are usually confined to some particular region.

"*Causes.*—Ecthyma is frequently produced by distinctly apparent causes: it is also sometimes developed spontaneously. In the first instance, it is often the result of irritating applications to the skin: thus, for instance, the characteristic pustules of ecthyma are frequently produced by friction with tartar emetic ointment. The pustules are usually set close together, the epidermis is always elevated for a considerable extent, by a sero-purulent fluid, and this elevation is in general umbilicated. They continue for several days, and are then succeeded by scabs, which begin to form in the centre: the accompanying inflammation is sometimes pretty severe, but it does not occasion any inconvenience, inasmuch as it is often desirable to establish this condition as a curative measure. It must not, however, be allowed to become intense.

"Idiopathic ecthyma is often the result of handling pulverulent and metallic substances; hence it is so frequently seen in grocers and masons. Ecthyma is also developed spontaneously, and in general appears to be symptomatic of some peculiar condition of the economy. It attacks all ages, and appears in every season, but it most frequently appears during the spring and summer in young persons and in adults. Women are sometimes affected with it during pregnancy. It appears to result, in the majority of cases, from great exertion, fatigue, bad food, want of cleanliness, and intense mental emotions. It is likewise developed in the advanced stages of certain chronic affections of the skin, as lichen, prurigo, and especially scabies; or during the convalescence of some of the acute dis-

eases, as scarlatina, measles, and variola. Finally, chronic inflammation of some of the internal organs may have considerable influence on the production of ecthyma, and in some rare cases an eruption of ecthymatous pustules has appeared during the crisis of gastro-enteritis. Echthyma may be altogether partial, and confined to one particular spot, when its duration varies from one to two weeks; or it may be general, appearing on every part of the body at the same time, usually by successive eruptions, and continue for weeks and even months.

"*Symptoms.*—When the disease is partial, the eruption appears at once; but it more commonly shows itself in successive crops. It usually commences with the evolution of red, inflamed, circumscribed spots, which attain a considerable size in the course of a few days. Their apices contain pus, whilst their bases are hard, circumscribed, and of a deep red colour. The fluid dries up in two or three days; and pretty thick scabs are formed, leaving dark red stains behind when they fall off. The pustules are in general distinct; they sometimes form irregular groups, and vary in size from that of a pea to that of a shilling, and beyond. The eruption is occasionally accompanied with very severe pain. In some instances suppuration takes place rapidly; in others slowly, not for several days. Sometimes the pus forms in small quantity, and occupies the apex of the pustule alone, the base of which is broad, hard, and inflamed. The epidermis is often raised considerably, so as to form a bulla. The purulent fluid is frequently confined beneath by a thin circular layer of transparent serous fluid. This appearance presents, especially when the pustules are formed on the hands and feet. Some of the pustules terminate by resolution, and slight whitish incrustations appear successively on the surface: but generally they are succeeded by thick, adherent scabs, which, on falling off, leave a deep red patch, and in some rare instances a cicatrix. When the eruption is successively developed for a considerable period, the red patches become very numerous and confounded together, giving a peculiar appearance to the diseased surface, which is only to be seen in ecthyma. Sometimes these pustules succeed deep ulcerations, particularly those of the lower extremities, which follow scarlatina and small-pox. They are then greatly inflamed round the base, the scabs are thick, and the ulcerated surface is in general dull, sanious, bloody, painful, and always unhealthy looking.

"Ecthyma frequently occurs in weak, ill-fed, cachectic children, especially during the convalescence of gastro-enteritis, when accompanied with distended abdomen. The size of the pustules is generally very irregular. A small pimple may often be seen close by a large pustule. They are of a circular form, and their colour is more or less red, according as the child is feeble and debilitated. The large pustules frequently suppurate, and, after a lengthened period, terminate in a small cicatrix; but often, after threatening suppuration, they gradually diminish, and terminate by desquamation.

"In old irritable persons, much addicted to drink, a variety of ecthyma is often observed, the *ecthyma cachecticum* of Willan, having much resemblance to rupia. It generally forms on the limbs, but every part of the body is subject to it. The skin is inflamed and more swollen than in the common forms of the disease. It assumes a deep red colour, and in about six or eight days the cuticle is raised over the pustule, is blackish, and infiltrated with blood. It soon bursts, and forms a thick dark scab, raised at the centre: the edges are hard, callous, and more or less inflamed. The scabs are very adherent, and do not become detached for several weeks—sometimes for months. If they fall accidentally, an unhealthy ulceration ensues, and the scab is with difficulty removed. Sometimes febrile symptoms precede or accompany the eruption, but they generally disappear with the disease. Sometimes engorgement of the lymphatic ganglions accompanies this affection, which it will be necessary to reduce by bleeding, &c. Suppuration and desiccation are the usual terminations to ecthyma. Resolution and ulceration are much more rare.

"*Diagnosis.*—The pustules of ecthyma are generally easily recognised by their

size and their inflamed base. These characters are sufficient to prevent them from being confounded with those of acne, impetigo, sycosis, and porrigo. However, when the pustules of acne and sycosis are accompanied with a hard red base, as they often are, they might be mistaken for the *phlyzaceous* pustules of ecthyma, if the induration more than the inflamed base of the former, and other peculiarities, which are always to be detected, did not obviate this error. The umbilicated pustules of variola, and the multilocular pustules of vaccinia, together with their contagious nature, will prevent their being confounded with ecthyma.

"It is more difficult to distinguish the eruption of ecthyma from that of syphilis, especially as the latter sometimes presents the same physical characters as the former. In these cases the copper-coloured areola, the history of the case, and the accompanying symptoms, form the basis of our diagnosis. Ecthyma cannot be confounded with scabies, if we recollect that the one is a vesicular and the other a pustular disease; and, if a few pustules should appear amongst the vesicles, the respective characters of scabies and ecthyma will enable them to be distinguished at a glance.

"Ecthyma may be distinguished from furunculi, by bearing in mind, that in the former, the inflammation proceeds from without inwards, whilst in furunculi it commences in the subcutaneous cellular tissue, which becomes mortified to a certain extent. It then proceeds outwards, and forms an opening, by which the dead tissue is expelled. Finally, rupia resembles ecthyma so much, that these two affections often appear to be merely varieties of the same disease. Ecthyma lucidum is much more difficult to distinguish from rupia than the simpler varieties of that disease.

"*Prognosis.*—Ecthyma is not a dangerous affection. The prognosis varies according to the extent of the disease, the age and condition of the patient, and the nature of the accompanying lesions.

"*Treatment.*—When the eruption is mild, partial, and follows a regular course, it merely requires diluents, simple or emollient baths, and attention to diet. If it assumes a severe form, and is accompanied with much inflammation, bleeding, or the application of leeches, may be resorted to with advantage. When the disease is of long standing, and the constitution of the patient is deteriorated, hygienic measures should form the principal part ot the treament. The patient should take moderate exercise, and nourishing food, together with simple or slightly-stimulating baths, as the alkaline or salt-water bath. Mild laxatives are very beneficial. Spirituous liquors, and excesses of all kinds, should be particularly avoided. Tonics, as quinine, iron, &c., are sometimes required. Emollient applications ought to be employed when the ulcers are inflamed, and difficult to heal. It is sometimes necessary, on the other hand, to excite the surface with nitrate of silver, or some stimulating lotions. Muriatic acid, diluted with water, is very efficacious in altering the condition of the parts, which under this treatment assume a more healthy aspect, and soon cicatrize."

A PRACTICAL TREATISE ON PULMONARY CONSUMPTION, ITS PATHOLOGY, DIAGNOSIS, AND TREATMENT, &c. By *Francis Cooke*, M. D. London, Churchill. 1842.

Dr. Cooke states in his Preface that the principal object which he has in view in adding one to the enormous quantity of books which have appeared on this subject of late years, is, to inquire into the causes of the failure of the ordinary course of treatment adopted, and to ascertain "why this disease has not participated, equally with others, in the improvements which have taken place in medical practice of late years." As chemistry has advanced new remedies have been

discovered adapted to diseases formerly considered as almost beyond the reach of the physician's art. In like manner, our author is inclined to imagine, consumption may prove to be not altogether the intractable disease which it is usually thought to be.

Dr. Cooke's views upon the subject appear to be these. Recovery from consumption may take place either in the first, or in the second stage of the disease:—In the first, by absorption, by which the tubercle is removed while yet in a crude state; in the second, by the softening and expectoration of the tuberculous matter, and the formation of a cicatrix or of a semi-cartilaginous cavity in the substance of the lung. How then are we to assist Nature in procuring one or other of these results?

The indications of cure in the first stage, are:—

1. To improve digestion, &c. and thus prevent the formation of fresh tubercle.
2. To promote the absorption of tubercle already deposited.

2. To allay pain, cough, &c., arrest hectic and emaciation, and remove any inflammatory complication or hæmorrhage which may exist.

1. With regard to the first point, Dr. Cooke thinks that "the blood of the consumptive being deficient in vitality, their food should be of such a quality, and taken in such a quantity, as to compensate for this deficiency. This end is most readily obtained by the lighter and more digestible kinds of animal nutriment: while the drink should be moderately stimulating, so as to afford some assistance to the stomach during the progress of digestion." With regard to change of climate, this is of benefit in this stage, in those cases where there is a great susceptibility to atmospheric variation. Great care ought to be taken in choosing the place to which the invalid is to be sent.

2. To promote absorption of tubercle;—though we know of no medicine which can effect this directly, yet there are some agents which may fulfil this end by indirectly stimulating the pulmonary absorbents. These are mercury, iodine and antimony. Of these Dr. Cooke seems to prefer iodine, applied to the lungs in the state of vapour. For this purpose, a teaspoonful of the iodine solution (gr. ij. iv. ad ℥ ij.), may be added to half a pint of water at the temperature of 180, and the patient directed to inhale the vapour for five minutes thrice a day. If the cough is troublesome, a little conium or hyoscyamus may be added. "The good effects of these measures are often apparent at the end of a fortnight; but I may here inculcate the necessity of a steady perseverance in the plan of treatment recommended."

3. To increase the tone of the system, and diminish irritability and hectic fever, Dr. Cooke most strongly recommends iron. Hectic fever, he says, is usually assignable to debility or exhaustion, occurring in an irritable habit, or in one rendered so by disease. Salines, &c. must not therefore be given merely because the affection is termed fever; "the nature, not the name of the disease must regulate its treatment."

This treatment, consists in giving iron, many formulæ for the administration of which, are given. This medicine, Dr. Cooke is inclined to think, not merely act by increasing the hæmatozine or red particles of the blood, and so augmenting the vital energy, but also, not improbably, may possess a "specific or peculiar power of conteracting the tuberculous diathesis; being, as it were, the antidote to the morbid element or poison."

To cause an increased determination of blood to the surface, relieving irritation and removing internal irritation, it is useful to rub the chest with some stimulating liniment.

To stop hæmoptysis, Dr. Cooke is decidedly adverse to the employment of bleeding; light diet, cold drinks, digitalis, antimony, or the acetate of lead, should be employed. "By these measures, the heart's action and the pulmonary circulation may be controlled as effectually as if the patient had been bled to insensibility; while the hæmorrhagic re-action, which always follows depletion,

is avoided; and the vital power, of which there is always sufficient need during convalescence, is spared."

"The preceding is the treatment of phthisis incipiens, which occasionally proves fatal; the processes of respiration and sanguification being impeded by the quantity of tubercles which fill the lungs. Violent attacks of dyspnœa occur, and the patient sinks before ulceration or any great emaciation has taken place. But more frequently the tubercles which occupy the superior portions of the lungs ulcerate, and are discharged by expectoration, forming the second stage of consumption, or phthisis confirmata."

Treatment of the Second Stage of Phthisis.—The indications of cure here, are, 1st, To promote the cicatrization of the tuberculous cavities; and 2nd, To relieve cough, diarrhœa, hectic, &c.

As it is impossible that the cavities in the lungs can cicatrice until they are emptied of their contents, the first point is to promote expectoration. Nature endeavours to effect this by the cough, it is improper therefore to interfere with this unnecessarily. Inhalations of the vapour of water containing a small quantity of hops, or of sulphuric æther, occasionally act better than any expectorant. When the cough is irritating, with but little expectoration, watery vapour diffused through the room, with perhaps the addition of some narcotic or emollient herbs, is often attended with relief. The air of all the rooms, moreover, ought to be kept at a uniform temperature. Dr. Cooke very properly reprobates the practice of sending patients in the last stage of phthisis, when no hope of recovery can exist, to die in a foreign land, separated from their friends and relations, and deprived of all the comforts of home.

In the Appendix, Dr. Cooke gives a very concise and useful tabular view of the physical signs of phthisis in its two stages; and another, exhibiting the annual mean temperature, height of the barometer, and weather, of the most noted places of resort for consumptive patients.

Having thus completed our analysis of the work, we have only to state that it is a very neatly written little book, and contains several useful hints as to the treatment of this most distressing malady, though Dr. Cooke undoubtedly carries his objections to the "lowering" system a little too far.

TRANSACTIONS OF THE MEDICAL AND PHYSICAL SOCIETY OF BOMBAY FOR THE YEAR 1841. No. IV. Bombay, 1841.

ARTICLE II.

REPORT ON THE DISEASES WHICH HAVE OCCURRED IN THE H. C.'s STEAM FLOTILLA, ON THE RIVERS OF MESOPOTAMIA, FROM THE 1ST JANUARY TO THE 31ST DECEMBER, 1839, WITH A SHORT SKETCH OF THE CLIMATE AND TOPOGRAPHY. BY JOHN C. FLOYD, Esq., Surgeon in Charge.

Presented by the Medical Board, April, 1841.

THIS is an excellent number; for, besides other articles of interest and importance, it contains five very able ones upon Topography, Climate, and Medical Statistics—the subjects most eagerly sought after in Europe, because by far the most important and interesting on the spot, in Asia.

The necessity, in respect to public health, of considering something more than is to be gathered from tables of the winds, and of the thermometric and barometric ranges and averages, is now beginning every where to be felt. We now begin to view man in relation to all those causes, whether moral or physical, that exercise an influence on his habits, or on his health, including a comprehensive

detail of his social and political relations: in short, we now consider that we must know every thing that relates to the man, so far as our apprehension and the state of science admit, ere we can be satisfied that we are really acquainted with his diseases, or their causes.

If, as we say, such is the state of feeling in this great question, in the region wherein we are now writing, with all its advantages, natural and acquired, and wherein man has made his own climate the pre-eminently good one that it now is, how much more does the subject increase in importance, owing to the concentrated nature of the causes of disease, so as to demand an increased and a careful consideration from our brethren in the East—the East, where man, owing to moral and social causes, has hardly yet made a step towards ameliorating his physical condition, without which, in the first instance, he must continue for ages yet to come, and despite of European institution and example, the same civil and religious slave he has been for ages past; and the Hindoos can count their fifty centuries of this double abjectness.

These preliminary observations are offered in commendation and encouragement of the efforts now, we hope, about to be made on a great and extended scale, by our brethren, to elucidate *the external causes of disease* in the East Indies. We can assure them, as their brother officer, Mr. Martin, has already done—that "such objects are in reality of more value than volumes of cases or details of routine practice; their careful investigation will confer permanent benefits on the public service, and, sooner or later, derive honour to themselves, difficult if not impossible to be obtained in any other way."

But we must now direct attention to Mr. Floyd's excellent sketch of the medical topography of the banks of the Euphrates and surrounding country, comprising the southren division of Turkish Arabia.

"Before entering on the above report, I have thought it right to preface it with a short sketch of the topography and climate of the country: for, the latter are so intimately connected with the production of disease, that without a knowledge of them, it would be as difficult to understand the various diseases, extending over such a tract of country, as it would be to localize and particular one.

The country, to which this report refers, extends from 30° to 34° North latitude, and from 40° to 45 East longitude. It includes all the country between the Persian Gulf and Bagdad on the North, the Lauristan Hills on the East, and the desert to the West of the Euphrates; and it has borne successively the names of Shinar, Babylonia, Chaldæa, Mesopotamia, and Irack Arabi. It forms at present the southerly division of Turkish Arabia, and comprises the greater part of the Pachalic of Bagdad.

Its physical aspect is that of an immense plain, composed of a deep stratum of black alluvial soil, watered by the Euphrates and Tigris, and intersected with numerous canals. These two great rivers, rising in the mountains of Armenia, pursue a course of several hundred miles, and then emerge from their rocky channel, about one hundred miles above Bagdad on the Tigris, and fifty above Hilla on the Euphrates. From thence, after a serpentine course of four hundred and fifty miles, during which they often approach within thirty miles of each other, they unite at Korna, (said to be one of the ancient "Apameæ," built by Seleneus Nicator, now an Arab village,) forty miles above Bussora, forming one of the noblest rivers of the East, which, under the name of the Shut-il-Arab, runs one hundred and thirty miles further, and disembogues itself into the Persian Gulf: the current averages two knots in the low, and five in the high season.

These rivers, in their extensive course through a flat country, are constantly changing their character, breaking down their banks, and forming islands, and these sharing the same fate every succeeding year.

The quantity of debris brought down every year, cannot be calculated with certainty, as it must vary with the rise and fall of the stream; but, it is im-

mensely great, there can be no doubt, from the rapid formation of islands and banks, and also from the immense alluvial banks, which are gradually extending themselves into the Persian Gulf.

Surrounding Country.—This is exceedingly bare, vegetation scanty, except on the banks of the rivers, where the pastoral Arabs feed their flocks, and in some places have settled down to cultivate the soil.

The soil from Bagdad to the Persian Gulf is entirely alluvial, and of a depth varying from twenty to thirty feet, we then come to a blue and white clay of a very adhesive nature, which contains a quantity of silica and alumina. This is manufactured into vases and water-vessels, and from its porosity, allowing of slight evaporation from the surface, the water contained in them is always deliciously cool.

No rocks any where show themselves, but from the character of the hills north of Bagdad and Hilla, their dip and strike into the Mesopotamia plain, I have reason to believe that they consist of a micaceous slate, gypsum, and calcareous sand-stone, the second of these abounding. Muriate of soda is an extensive product of this desert, and particularly near Bussora, where it is observed in the form of beautiful crystals, at the edge of every little pond, and it is exported in large quantities from the place. The immense ruins, composed of sun and kiln-burnt bricks, which are scattered over this country, attest the greatness of its former population; the earth at these ruins, as that of Seleucia below Bagdad, when washed and evaporated, yields a considerable quantity of saltpetre.

Canals.—The number and extent of these extraordinary works, which once rendered this country so productive, we cannot do more than glance at. We are told that, "in consequence of the periodical rise of the Euphrates, artificial canals were dug by the ancient inhabitants, for the double purpose of protecting the contiguous plains from inundation, and at the same time of preserving the superfluous waters for the irrigation of the soil;"—that it had this effect, the present sterility of the upper portion of this country, and the inundation of the lower, fully demonstrate. Between Bagdad and Babylon, a distance of forty-five miles south, we meet with four very celebrated canals, one of these called the Nahar Malacha, or Royal canal, which Julian sailed his fleet through. The magnitude of this may be judged from the fact of the Honourable Company's steamer Euphrates having sailed through one called the Succaloweia, which runs from river to river, but it is now shut up to prevent any further inundation. Another canal, called the Naharawan, runs on the east side of Bagdad for a distance of three hundred miles; its bed is nearly dry. Midway between Bagdad and Bussora, at Kool-il-Amarah, is a canal called the Heye, which runs to the Euphrates, for a distance of ninety miles; it is navigable.

The only other canal which I shall mention is the famous Palla Copus, navigated by Alexander the Great, and supposed do be the ancient bed of the Euphrates. It commences below Hilla, and a branch of it was repaired for a short distance by the Nabob of Oudi as far as Mesid Ali, a place of pilgrimage. This canal being stopped up, the Euphrates has overflowed its banks, and formed an extensive, and deep lake, in the western desert.

Vegetation,—as might be expected, is abundant on the banks, particularly in the vicinity of Bussora, Korna, Bagdad, and Hilla, where forests of splendid date-trees confer on the inhabitants immense wealth; along with these the glycyrrhiza, the tamarisk, and the urunda abound, and in some places the two latter form immense jungles, in which the lion and the leopard are occasionally seen. The gardens at Bussora and Bagdad produce almost all the varieties of fruit, peculiar to a temperate climate, and even some of the tropical plants

flourish here, as the mango, the plantain, and herma: all the European culinary vegetables are likewise yielded in abundance. As rain does not fall in sufficient quantities for agricultural purposes, all irrigation is artificial, and carried on by means of water-wheels worked by bullocks. The different sorts of corn, sesamum orientale, (an oil plant,) are cultivated in great abundance, also cotton, opium, indigo, rice, and tobacco.

The Delta enclosed between the Euphrates and Tigris, has, not unaptly, been compared to that of Egypt; for in the time of Herodotus, the ground yielded three hundred and sixty times more than it received, and whatever may be the approach to truth, when oriental historians fix upon it as the site of the "Garden of Eden," certain it is, that its capabilities are as evident as ever, though the superbush, the colocynth (of the Pharmacopœia,) some species of mimosa, the camelthorn, the salix Babylonica, and a few saliferous plants, are all that now relieve the eye, in a country which once yielded produce equal to a third part of Asia.

The Inundations.—The banks of these rivers are exceedingly low, and thereby easily overflowed, at the time of the annual rise; these take place in the Spring and Summer months, from the melting of the snow in the mountains of Armenia; they form an important feature in the medical topography of this country, as they completely change the nature of the climate where they prevail. The rivers often fall and rise during the Winter months, but the grand rise takes place in the Tigris in April, and in the Euphrates in May, when the former rises about eighteen feet, and the latter fourteen feet, and the current which before was only one and a half, is increased to five knots. Notwithstanding this, the rivers keep their height, the banks then give way, and a more or less extensive inundation covers the country, depopulating villages, and laying waste the gardens and fields; such, at least, was the case at Bagdad in 1839, when from the above cause half the town was under water, but such are temporary and soon retire, as the rivers again descend in August and September.

From Bagdad and Hilla northwards the country is not so liable to these inundations, as the banks are higher. About thirty miles above the junction of the rivers at Korna the desert is always one sheet of water. Carry a line from this point across the Euphrates, and from thence over the desert to Bussora and Tobier, it is one vast marsh for a distance of seventy miles. This inundation took place about eleven years ago, shortly before the last plague. A line of banks was formerly kept up along the Euphrates to keep the water out, but these have been completely swept away, and the government of the country are neither able nor willing to repair them, which would recover a fine tract of country, secure Bussora from ruin and the inhabitants from disease. Indeed it is not improbable that the Euphrates will find its way into its ancient channel, which emptied itself near the modern town of Grane in the Persian Gulf.

Climate.—The climate of this country must vary exceedingly, as we descend from the snow-clad hills where the rivers have their source; but, of that portion, between the Persian Gulf and Bagdad, included in this report, there is little difference unless where local causes operate. The seasons may be divided into Spring, hot, and cold; the former commences about the end of January, and continues till the end of April. The thermometer ranges from 50° to 70° daily, though sometimes it rises much above this; North and South winds blow alternately for five or six days at a time, and at their change sometimes heavy showers of rain descend and renew the verdure of the desert: all agricultural operations are now carried on. May is the first of the very hot months; in it the corn ripens and is gathered in before the end of June, when the thermometer averages 105° daily, and every thing appears scorched from the sun. The heat of July and August is intolerable—the Arabs call it "saum," or the date harvest; the

thermometer is 115° in the shade, and the inhabitants take shelter in their sardaubs or cellars. Hot winds occasionally prevail; the nights however are cool; the atmosphere free from moisture, except near the marshes; and refreshing sleep in the open air compensates, in some degree, for the enervation produced by the heat of the day. In September the heat gradually declines. The cold weather commences in October, when there is a variation of 20° to 25° daily, and from this to the end of Jaunary it is not unusual to see every thing frozen on the decks. The prevailing winds are the north-west and south-east, called by the natives the Shumaul and Shirgee; they blow chiefly in the Winter and Spring. Tornadoes or whirlwinds are not uncommon in the hot weather; they approach giving but little warning, and carrying an immense cloud of dust which involves everything in obscurity. It was in such a one that His Majesty's steamer "Tigris" was lost on the Euphrates in 1835.

The following Table taken from the register of the thermometer kept in the cabin of the Euphrates, which is rendered very cool by wind-sails, will elucidate the above."

TABLE, showing the Maximum, Minimum, and Mean temperature, as registered from the Thermometer at Bagdad, for the Year 1840.

	Maximum.	Minimum.	Mean.	Prevailing Winds.
January	64	25	50	N.W. and S.E., with rain.
February . . .	68	36	57	N.W. and S.E., with little rain.
March	75	36	66	Strong N.W.
April	83	48	74	Ditto.
May	95	65	77	Towards the end of the month hot wind.
June	101	72	87	N.W. breezes.
July	105	78	98	Calm clear weather, thermometer 105° underneath the awnings, and 135° in the sun.
August	108	79	97	Hot winds.
September . . .	100	65	85	N.W., temperature of river 80°.
October	97	58	67	S.W., with squalls.
November . . .	76	51	63	Rains with squalls.
December . . .	65	33	45	In the fore part of this month N.W. with rain in the latter frosts."

This very excellent description is followed by a more detailed reference to the particular stations of the steamers; and this last, by an account of the prevailing diseases. These are just what might, *a priori*, be expected to arise in such a country as we have seen described, acted on by a powerful sun. The observations of Mr. Floyd on the several diseases, their prevention and cure, are highly judicious and practical; but we cannot now afford time or space to refer to them.

We hope in another number to recur to the Bombay "Transactions," and to notice the other excellent articles contained in it. Meanwhile, we trust to be favoured with many succeding volumes, comprising articles such as we have here briefly noticed.

Spirit of the Foreign Periodicals.

M. Forget's Clinique at Strasbourg.

M. *Forget* may be considered as the *Bouillaud* of the provinces. He is evidently full of intelligence and professional activity, and, although still under the dominion of his Parisian education, will, we think, ere long emancipate himself from many of his prejudicies *en ite*. This is pretty apparent from the tone in several passages of the annual report of his practice at the Strasbourg Hospital, published a few months ago. The very first extract shows that he is wavering in his ideas on the *enteric* doctrine of fever.

"In the present state of medical science, it is sometimes impossible clearly to distinguish simple irritation not only from mere disorder (embarras) of the stomach, but also from incipient follicular enteritis, or from an impending eruptive fever. It is the result of the case that determines the nature of the malady; the success of the treatment employed proves, by itself alone, little or nothing. We have, however, in our practice, conformed to the precepts of the classical authors, by administering emetics and purgatives to those patients who were affected with the symptoms of *gastricity*. (Such a word!) Many were relieved by their use; but it was not the less obvious that evacuants are generally very ineffectual in rectifying the state of the tongue."

The Professor gladly avails himself of the authority of *Stoll*, "le grand humoriste," to prove that, be the nature of a disease what it may, whenever any inflammatory symptoms are present, these must be first attended to. What rational physician ever doubted the propriety of the precept? but then we have never heard that *Stoll* or any other of the older authors, whom M. *Forget* is now so fond of quoting, recommends the use of antiphlogistic remedies when no symptoms of inflammation exist.

To proceed: there were 18 cases of "affections gastro-intestinales" treated during the course of the year. "Several of these," we are told, "might have been considered as cases of mild typhoid fever, if we were less severe in the qualification of diseases."

[Would that these Frenchmen used more intelligible common-sense language: they seem always to be acting on the principle of their wily countryman, that "language was given to man to conceal his sentiments."]

There where 16 cases of *diarrheic enteritis*, several of which also we might, "avec un peu de bon vouloir," have classified among the typhoid fevers.

Seven of these cases proved fatal. In all of them there were found, on dissection, decided traces of inflammation in the large intestines. M. *Forget's* treatment—and it seems, as well as we can judge from the imperfect report, to have been on the whole judicious—consisted in the use of antiphlogistics, in the first instance, then of opiates, and lastly of astringents: "such," he adds, "was the practice of *Sydenham*—with this one exception, that he employed purgatives, acting on his theory of the presence of acrid matter in the bowels." With a good deal of inconsistency, the Professor himself remarks, only a few lines afterwards, that "there are cases where mild evacuants may be serviceable, and others where the feebleness of the patient and the duration of the malady may forbid the use of anything debilitating."

We come now to a complaint about which the French writers have been bothering themselves a good deal of late—gastralgia, the diagnosis of which is, as we are told by M. *Forget*, "une chose grave et delicate." Unwilling to *go the whole hog*, in assenting either to the inflammatory or to the non-inflammatory

doctrine as to the nature of this disease, he very wisely adopts a *juste-milieu* course, and avoids committing himself in any way.

The following sentence, however looks a good deal like an abjuration of the Broussaian creed: "God forbid that we should deny the exaggerations of a fallen doctrine; (!) we fear, however, that the enthusiasm of opposition may carry many medical men into the very opposite errors. For our own part we have often successfully combated by means of a mild regimen, and gentle soothing medicines, several accidents caused by the employment of potent remedies, administered for the relief of supposed nervous affections." A sensible and useful remark; for, unquestionably, the use of stimulants and antispasmodics is often carried a great deal too far, and positive harm is done. Still, we have no hesitation in saying that very few cases of genuine gastralgia have any thing truly inflammatory in their nature.

During the year, no fewer than eight cases—of which five proved fatal—of cancer of the stomach were received into the hospital. (Is this disease more common in France than in this country?)

One of the fatal cases is so interesting, that we shall give an account of it at some length.

Tumour in the Abdomen; Encephaloid Disease of the Stomach and Omentum, mistaken for an Ovarian Enlargement.—A woman, 36 years of age, came into the hospital for a large tumour situated in the hypogastric region; according to her report, it was only of two months' standing. Three physicians, who had seen her, pronounced the case to be one of ovarian cystic enlargement. The right lower extremity was somewhat anasarcous; the swelling leaned over to that side more than to the other. One day, the patient was suddenly seized with frequent vomiting of a dark-coloured matter, like chocolate or coffee-grounds.

It was then, for the first time, discovered that several "bosselures" were perceptible in the epigastric region; and the conclusion, therefore, was that a cancer of the stomach existed. From this date, there was always present more or less tenderness of the abdomen; occasionally the vomiting returned; the wasting of the body was rapid, although there was never any decided feverishness. Twenty days after the appearance of these last-named symptoms, she died during the act of vomiting.

Dissection.—On opening the abdominal cavity, a quantity of fetid yellowish serosity flowed out; the whole of the peritoneum appeared to be inflamed, especially towards the pelvis; the liver was very bulky, and exhibited numerous encephaloid tumours, in different stages of softening: the hard irregularities, which had been felt during life in the epigastrium, were from these tumours in the liver, and not from the stomach, as had been imagined.

This latter viscus was, however, much dilated and lengthened in a vertical direction, its pyloric extremity being buried, so to speak, in the tumour that existed in the hypogastric region. This tumour, that was as large as the head of a full-grown fœtus, was hard and uneven; it was formed by an encephaloid mass developed at the expense of the omentum, and completely surrounding the pylorus, which itself had become degenerated into a substance of a similar nature. At the point of junction between the tumour and the pylorus, there was found to be a large perforation, which opened directly into the cavity of the stomach.

"Here," says M. *Forget*, "we see the many chances of error that occasionally occur in the diagnosis of disease. A tumour in the abdomen is taken for an ovarian cyst, and it turns out to be a cancerous degeneration of the omentum; the knobby irregularities felt in the epigastric region are attributed to disease of the stomach, whereas they were altogether owing to a morbid condition of the liver.

"During life, it was supposed that the cardiac extremity of the stomach was the part chiefly affected; but it was sound, and the pylorus was thoroughly diseased. A perforation existed in the stomach; yet this was not suspected during life. The peritoneum, also, was inflamed, and yet there had been no symptoms to indicate the disease."

M. *Forget* remarks that in not a few cases of cancer of the stomach, the symptoms are so irregular and uncertain, that it is scarcely possible to come to an exact diagnosis during life. "There is not," says he, "a single classical principle relative to the diagnosis of the disease, which does not find some contradiction in the cases which I have just related."

Let us now hear what the Professor says of the cases of typhoid Fever which were admitted into the hospital. He commences his report thus:—

"In spite of the specious arguments and severe criticisms which have been directed against our doctrines, we persist in regarding the *follicular enteritis* as the essential, if not always the primitive, element in all these fevers. There are three elements to be considered in the history of the disease—the fever, the typhoid disposition, (appareil typhoide,) and the follicular enteritis. These three elements constitute grave or malignant fevers. Of them one only, the last, is present in all cases; the fever and the typhoid disposition are sometimes awanting. It is therefore the follicular enteritis, which must be regarded as the most necessary and fundamental element of the disease in question. Such being our opinion, *we do not hesitate to classify typhoid fevers among the diseases of the digestive organs*—only with the distinction of grouping them together by themselves "en queue ou hors de ligne," as deserving a special consideration.

Forty-four cases, in all, were admitted into the hospital, in the course of the twelvemonths; more of these occurred in Autumn and Winter than in the other seasons. The Professor strives to show from the circumstances of the residence, occupations, &c of most of his patients, that miasms had little or nothing to do with the engendering of the disease. His reasoning on this point is very shallow, as may be at once seen from the following sentence, with which he closes his remarks: "before we can admit the influence of miasmatic poisoning, you must prove to us that the fever does never attack those persons who have not been exposed to it." If the learned Professor can tell us who are not exposed to such an agency, when it exists at all in any locality, we might admit the force of his reasoning; but certainly not till then.

Of the forty-four cases, nine only proved fatal. It is unnecessary to allude particularly to the favourable ones, as very many of them seem not to have been examples of typhus fever at all: no wonder, therefore, that they were quickly cured by the use of *emollients*. Let us briefly look to the fatal cases.

One man, who had just recovered from jaundice which had been treated with antiphlogistics and laxatives, was seized, a few days after leaving the hospital, with the symptoms of follicular enteritis. He was re-admitted on the 10th day after its *debut*, and was immediately bled from the arm. As the fever had a bilious character, the case was thought a favourable one for the use of purgatives. Considerable diarrhœa ensued; the typhoid state was aggravated; and the patient became delirious. Emollients, derivatives, astringents, and tonics, were successively employed, but all in vain; the patient died on the forty-first day after his reception into the hospital. On *dissection*, there were numerous ulcerations both in the large and in the small bowels. (Killed by the doctor.)

Here is another case. The report is translated literally. "A woman, antecedents not noted. Emollients, opiates, astringents, extract of nux vomica; against the diarrhœa, subnitrate of bismuth, enemata of nitrate of silver, tonics. Died on the 70th day. Generalised villous enteritis, some ulcerations; a few cicatrices"

(How gracefully brief and forcibly expressive!)

Without specifying other cases, may we not ask with some show of truth, is it not rather strange that no lesions seem to have been found any where else in almost any of the fatal cases, except in the bowels? Did M. *Forget* or his assistants look for them elsewhere?—we much doubt it Did he, in any one instance, test the accuracy of M *Andral's* recent researches on the state of the blood in fever? or was such a humoral notion as this deemed quite unworthy of the notice of a physiological physician? M. *Forget* seems anxious not to be taken for an out-and-out Sangrado doctor in his treatment of the disease; for, in summing up his observations, he takes care to tell us that three only of the patients were bled by his orders, and he reminds his readers that he has expressly declared, in his work on Follicular Enteritis, that "eclectism is the highest expression of the treatment of the disease." The concluding paragraph of his observations is so amusing that we cannot pass it over. "In our opinion the fundamental treatment is unquestionably the antiphlogistic; but this does not necessarily imply the use of blood-letting; for *expectation* forms part of it: (something like Paddy's definition of an 'armed neutrality'—a charge with the bayonet, to be sure!). In the present day a deplorable anarchy prevails in reference to the treatment of typhoid fevers; hence tonics and purgatives, as well as antiphlogistics have their zealous advocates. Heaven grant that the truth may ere long be found out; for it is this alone that we seek, even though it may convict us of error."

Diseases of the Respiratory Organs.

Pringle has very happily expressed an important truth in reference to the health of armies by this pithy expression, "plus occidit aer quam gladius." In Alsatia (the district in which Strasbourg is situated), as in almost every other country, diseases of the chest, induced by the vicissitudes of the weather, are the greatest scourge that we know, more especially among the lower orders of the people.

M. *Forget* alludes to the frequency of pulmonary emphysema being induced by, or at least associated with, chronic catarrh, and rendering the cure of it quite hopeless. The excessive use of expectorants, sedatives, &c. in many such cases often does a great deal of harm, by disordering the functions of the stomach; and such remedies can have but little effect on the disease. Quietude and outward irritation on the chest are the most important means of relief: opium, and especially the acetate of morphia, is often however a most necessary adjuvant.

The following remarks, on the use of the tartrate of antimony in inflammatory diseases of the chest, are very sensible.

"This medicine, exhibited in full doses, is in our opinion the second (bleeding being the first) of the heroic means to subdue such attacks. We almost invariably precede its use with blood-letting, if this can possibly be used; partly because its good effects are thereby much promoted, and also because unpleasant effects have been occasionally observed, when the treatment was trusted to it alone. The less that a patient drinks, while taking the medicine, the better; as the *tolerance* is thus more readily induced. When this effect is once established, we may increase the dose of the medicine considerably each day. Three or four days are usually sufficient for the resolution of pneumonia treated in this way; and not unfrequently the favourable result takes place in 24 or 48 hours. As a general remark, we may state that we are not in the habit of using the tartrate except when the pneumonia resists blood-letting" (Would it not be wiser to use both remedies together, if each have an acknowledged efficacy on the progress of the disease?)

It seems that Pulmonary phthisis is a very frequent cause of mortality among the lower orders in Strasbourg. M. *Forget* is too honourable and too truthful a physician to pretend to cure this disease. In one of the fatal cases, a cavern was found on dissection towards the basis of the left lung, while the upper part of this viscus was quite sound. Such an occurrence proves the necessity of auscul-

ting the whole extent of the chest, and not limiting the examination, as is too frequently done, to the upper part only.

Diseases of the heart also are very common in Strasbourg. We allude to them here only for the purpose of introducing the following remarks on cardiac auscultation. * * * "For a long time our attention has been directed to those interminable discussions on the causes of the cardiac sounds. To our view the theory of M. *Rouanet*—who attributes them entirely to the movements of the valves—is by far the most rational, and seems to be the one that accords best with physiological and pathological observations. According to it, the existence of any abnormal sound indicates the presence of valvular disorder; and seldom, it must be confessed, is this diagnosis untrue.

Aneurism or, more correctly speaking, dilatation with hypertrophe of the heart, is most frequently, but certainly not in all cases without exception, the result of chronic endocarditis (ossification of the valves with contraction of the arterial orifices,) occasionally it seems to be produced by chronic pericarditis, or by any impediment to the free circulation of the blood, whether this impediment be situated near to, or at a distance from, the heart itself. Rheumatism is unquestionably a common cause of endocarditis; but certainly the two diseases are not so very frequently linked together, as alleged by M. *Bouillaud;* in not a few cases it will be found impossible to trace any connection between them. M. *Forget* says nothing very satisfactory as respects the treatment of these cardiac cases. He omits to mention the most important of all remedies, a seton inserted over the heart. According to our experience, it is worth all other remedies put together.—(*Rev.*)

Under the head of *phlebitis*, we find some interesting remarks on the much disputed question, whether inflammation of the veins be a necessary antecedent of purulent infection of the system, and of the formation of what have been called *metastatic* abscesses in the viscera of the chest and abdomen. The result of M. *Forget's* observations hitherto has been rather unfavourable to the correctness of this theory. A woman was received into the hospital with severe tracheitis: the symptoms were so alarming as to threaten suffocation, and laryngotomy was performed with great relief to the patient. Subsequently, however, an abscess formed in the left hip, and all the symptoms of purulent resorption gradually came on. On dissection, several metastatic abscesses were found in the substance of the spleen, but none either in the lungs or in the liver.

In another case, one of albuminaria, a diffused phlegmon of the lower extremities supervened, caused by the scarifications that had been employed: the patient died in a typhoid state. In this case the spleen was the only viscus in which any abscesses were found. Now in neither of these cases could any traces of phlebitis be detected. "I have been long struck," says the Professor, "with the circumstance of the not unfrequent absence of any dangerous symptoms supervening on the spontaneous disappearance of outward abscesses, and on the other hand, of the fatal consequences often produced by the absorption of the same fluid in cases of open wounds. In what other way can we account for such a difference, except by supposing that the purulent matter undergoes some unfavourable change by exposure to the air? For some years past, several cases of spontaneous phlebitis have occurred among our patients; and yet in scarcely a single instance do I remember that the symptoms of purulent absorption were manifested. A great deal depends, we are quite convinced, on the circumstance whether the purulent matter becomes exposed, or not, to the outward air." There has often been a good deal of unnecessary alarm on the subject of the supervention of phlebitis after venæsection. In not a few of the cases, in which an abscess has formed over the wound of the vein, the vessel itself is not at all affected; and in other cases, where there has certainly been a certain degree of phlebitis present, the disease has been readily checked by the use of appropriate means. Of these the most useful is unquestionably the application

first of a number of leeches *above*, not *around*, the seat of the wound, and then of emollient poultices directly to it. I do not know, says our author, that the compression or the division of the affected vein above the seat of the disease has ever prevented the progress of the morbid action. If the symptoms of purulent resorption have once taken place, I know of no remedy that holds out the slightest prospect of doing good.

Under the head of *Alterations of the Blood*,* M. *Forget* ranks chlorosis, a disease which, he says, essentially depends on a diminution in the normal proportion of the fibrine and colouring matter of the circulating fluid. The researches of *Barruel*, *Lecanu*, *Andral* and others, leave no doubt on this point. Much importance has been attached by some writers to the existence of certain peculiar sounds that may be perceived by auscultation over the carotid and other large arteries in chlorotic patients, and some physicians have even gone so far as to regard the presence of these as the genuine diagnostic mark of the disease in question. Our author's opinion on the subject may be gathered from the following paragraph: "A useful sign, but one that is certainly very inconstant and obscure in its mechanism, has recently been insisted upon as the most expressive of all, particularly by M. *Bouillaud*—whose name alone would make us believe that the opinion was 'un peu outré'—*Rev.*—we allude to the blowing sound heard over the carotid arteries. We have heard this sound in all its shades and degrees, from the simple intermittent murmur to the continued *bruit de tempete* and from the tick or buzz of an insect to the strong *bruit du diable*. These sounds may often be heard over other arteries and over the heart itself."

As a matter of course, steel is *the* remedy in most cases of chlorosis. The form in which it is exhibited does not matter a great deal, provided it is well borne and agrees with the system: M. *Forget* prefers pills made of equal parts of sulphate of iron and carbonate of potash. As to the lactate of iron and other preparations which have been recently introduced, they are all merely "affaires de mode." When the stomach is highly irritable, so that it does not bear the steel well, this may be combined with opium; and when the bowels are confined, with rhubarb. The following observations are very sensible: "It is much to be desired that all medical practitioners fully appreciated the spirit of the foregoing remarks respecting the *ætiology* of chlorosis. If such were the case, we should not see so much precious time wasted in endeavouring to bring back the catamenia, which very naturally often refuse to return for a length of time; or in trying to calm the palpitations of the heart by bleeding and such like remedies, which only aggravate the disorder; or in weakening patients who do not digest their food, by the use of strong purgatives, or lastly, calming by antispasmodic medicines obstinate nervous symptoms. Restore the blood to its healthy condition, and all these symptoms will vanish."—*Gazette Medicale de Strasbourg.*

M. GIBERT'S LETTER ON THE LATE EPIDEMIC OF TYPHOID FEVER IN PARIS.

"I was present lately," writes this intelligent physician to his friend Dr. *Cayol*, "at a meeting of our hospital physicians, when various questions connected with

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* The mere circumstance of such an expression as this in the writings of a Broussaian physician is a very emphatic sign of the change that is at the present time going on in medical doctrine throughout France. In a previous part of this Clinical Report, M. *Forget* remarks that "many affections, acute as well as chronic, are essentially derived from certain primary or secondary alterations of the circulating fluids"—an admission of the highest importance in a practical, as well as in a theoretical, point of view.

the reigning epidemic—during last Summer and Autumn in Paris—formed the chief topic of conversation; one of the gentlemen told us that, in a hospital which contains 230 beds, he had upwards of 60 cases of *typhoid fever* under his care at one time; another said that he also had had a great number, and had not lost a single case out of several hundreds; a third, communicated the important information that, provided no active treatment was employed, and the *expectant* method chiefly trusted to, nearly all the cases might do well; while a fourth added, that he thought mild laxatives in many instances useful. All agreed in denominating the disease as *typhoid fever*.

"But, although this name may have been brought into fashion by a school which is willingly satisfied with words in place of things, who is there but will not admit that the appellation is ill chosen at best, and that in particular it cannot be properly applied to the epidemic now prevailing in this metropolis? For in what does this epidemic really consist? In fevers induced by the high and continued heat of an unusually warm Summer, which has partaken in many respects of the character of a tropical season. Now these fevers (generally of a mild form, as already said) assume very rarely the proper *typhoid* character, but usually either a bilious, mucous or a catarrhal form; in some cases, the fever is inflammatory and continued; occasionally it is more or less remittent; and still more rarely has it anything of an adynamic or putrid character—the very character, be it observed, to which the term of *typhoid* would be least inapplicable.

"All these forms of febrile disease are evidently attributable to the mode of reaction in individual cases—a re-action, which manifests itself in different ways, according as the constitution of the patient is either sanguineous, bilious, or nervous.

"I have several patients at the present moment, in the Hospital St. Louis, affected more or less severely with the epidemic. In some it has been only an ephemeral fever, which passed off by sweating in the course of two or three days; while, in others, the fever has been of a catarrhal character; cough, nausea, slight diarrhœa, and a white coating of the tongue, being the most prominent symptoms. In one of the patients, the disease assumed the ataxic form, characterised by restlessness, delirium, paralysis of the bladder, and constipation of the bowels. In a few cases, the symptoms have been more or less remittent. Now I ask, is it not prudent to retain the old classic names of these various forms of fever, rather than to blend them all together under a single appellation, *typhoid*?—which, as far as the present epidemic is concerned, is unquestionably the least applicable and proper of all. Is there not a great practical advantage in retaining appellations, which in themselves suggest therapeutic indications? and has it not been clearly shown that the pretended successes of certain statistic physicians, who have boasted of their having lost scarcely any patients under such and such a course of treatment, may be at once traced to the erroneous use of this phrase, *typhoid fever*?

M. *Gibert* closes his remarks by stating that unquestionably the "medecine expectante" was, on the whole, the most safe and judicious mode of treating the late epidemic in Paris. In those cases, where the fever had somewhat of an ataxic or remittent character (usually without any shivering at the commencement of the paroxysm,) he administered quinine with decided benefit; and in a few, where the vascular action was excessive, he had recourse to moderate depletion of blood. —*Revue Medicale.*

M. Cayol's Letter on Typhoid Fever.

M *Gibert* having requested the talented Editor of the Revue Medicale to communicate to the public his thoughts on this much vexed subject, he at once complied with the request of his friend, and the following extracts from his Letter will enable our readers to judge of the spirit and tone of his remarks.

"You ask me to talk with you on the subject of typhoid fever. Helas! you well know what I think of it: you wish me to put my hand into an open wound, to lay bare the miseries and expose the infirmities of the school that has been called the materialist, the anatomical, the anatomo-pathological, the physiological, the organic, the eclectic, or by what other epithet you may choose to know it."

. . . . . "In medical science, there cannot be more than two schools, or systems of doctrine; and we may distinguish them thus:—

"The *first* views the organs of the body, whether in a healthy or a morbid state, as the instruments of life; the diseases as the abnormal re-actions or functions of the organism; and the organic alterations as the effects and eventual results of these abnormal re-actions or functions: we need scarcely add, that this is the vitalist or spiritualist school in medicine, and is the one to which we belong.

"The *second* seeks and pretends to discover in the organs or their contexture, in the molecules of which they consist, and in their material alterations, the reason, the *why* and the *wherefore* of life, and of all the physiological and pathological phenomena by which it is manifested: this is the anatomical or materialist school of medicine. This school, the superannuated daughter of the *philosophism* of last century, has no longer any point of support in modern science, which has shaken itself free from the material fetters, with which it was encumbered, to soar to a more elevated and intellectual sphere; but it now rests upon a spirit of *coterie*, and mutual admiration, which has succeded marvellously well of late years. Adroit in profiting by all political circumstances, on every occasion, it has got itself installed into all the professional chairs, and into almost every scientific position that it can possibly reach; and thus it has acquired a sort of monopoly in the public teaching of medicine, most zealously excluding every one, who does not hold the same opinions, from having any share along with it. Every work, that is purely intellectual, is displeasing to it, and will often excite a movement of repulsion on its part; for it knows nothing and appreciates nothing but figures and material phenomena.

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"As long as the anatomical school had a head, poised on the broad shoulders of *Broussais*, it managed to keep itself up to the height or position of a doctrinal system. By pushing to the extremest limits the localization of diseases, and referring to a gastro-enteric irritation all the phenomena of essential or primitive fevers, the celebrated reformer solved (doubtless, to his own satisfaction and that of his immediate disciples,) the puzzling question as to the proximate cause of these diseases—the calumniating point of every medical doctrine.

"When *Broussais* died, his school died with him; no head, no doctrine:—or, rather, the doctrine died first; for every one knows that *Broussais* survived by several years the death of his intellectual offspring. At the same time, there was a schism in the camp of the materialists. The present existing *coterie*, which had already began to bestir itself not a little, occupied the same position in the school of medicine which the *doctrinaires* do in that of politics—they have no doctrine, and yet they regard themselves as the sole adepts in government-craft.* It (the coterie) refused to acknowledge *Broussais* as its legitimate head; it threw off the appellation of *physiological*, and took that of *anatomo-pathological*, *organic* and *eclectic*. The famous doctrine of gastro-enteritis being the

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* It is curious to notice the connection between sides in politics, and some of the schools of art and literature in France.

The Hippocratic physicians are almost all ultra-royalists; the out-and-out Broussaists are to a man either republicans or Buonapartists; while the middle men, the doctrinaires, those of the *juste-milieu* party, are generally friendly to

essential and invariable cause of fevers was not admitted without reservation this, therefore, became more a verbal question in the schools.

"The embarrassment was great. M. Andral, who a few days before was engaged in publishing a second edition of his Clinique Médicale, in order showing what progress he make of fevers, left them unsingularized. 'The progress of science,' said he, 'has indeed not yet to decide, as in the former edition, a certain number of fevers.' Singular *progress* that! a few more steps, and medical science will be down at Zero. 'Yet,' continued M. Andral, 'I have carefully preserved all the observations contained in that volume: but have now given them another place, arranging some of them in the chapter on *diseases of the stomach*, and others in that on *diseases of the nervous centres*.'

"We clearly perceive by these timid and embarrassed remarks, that the young professor had retained a slice of the gastro-enteric system, since a section only of the volume of fevers in the first edition was transposed to the chapter on diseases of the abdomen. We see, also, that he hesitated in such upon this slice of doctrine a fraction of another, of quite a different nature.

Vain efforts of modern nosology.

"The term *gastro-entérite* was now seldom heard of, and it was therefore requisite to substitute another. One proposed *entéro-mésaraïte*, another *entérite folliculeuse*, a third *exanthème intestinal*, and so forth: but none of these were plastic enough to suit all circumstances and to embrace every case of fever at all times and under all circumstances. A new phrase was therefore necessary: and it was resolved to call the disease not *typhus*, as it used to be, but *typhoid* fever: and subsequently, in order to get rid of the objectionable word 'fever,' it was denominated *typhoid disease*, or *affection*.

"The word typhus (τῦφος) signifies stupor: and hence, *Hippocrates*, and many writers after him, employed it to designate a grave continued fever, of which stupor or oppression was a predominant symptom. To apply, therefore, the phrase *typhoid fever* or *disease* to all continued fevers alike, shows the utter confusion of ideas, and the absence of all sound medical doctrine in the schools of the present day.

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"If there is to be any positive meaning attached to words, we may surely expect that a *typhoid* fever will bear some resemblance in its essential characters to a *typhus* fever. When we speak of the *variolaid* disease we signify an exanthem which approaches more or less nearly in its symptoms to genuine *variola*. Why then not follow the same rule, when we make use of the words *typhoid* and *typhus*? If there be not any τῦφος or stupor, why call the disease *typhoid*? and how can it have any resemblance to the fever, the very name of which points to this, as its characteristic phenomenon!

Louis Philippe and the existing state of affairs. The first set clings closely to every thing that is hallowed by age, and venerable from association; they love to throw an air of spirituality around all the phenomena of living nature; and hence their favourite writers are such men as *Chateaubriand* and *Lamartine*.

The Broussaists are the antipodes of these; they are all more or less decided materialists in their general philosophy, and regard with especial admiration the bold originality of the modern Romancists, such as *Victor Hugo*, *Balzac*, &c. The eclectics, or the third party, are intermediate between the two; their philosophy is altogether of a calmer character than that of either; less enthusiastic and poetical than the former, they avoid the cold abstractions and strivings after exactitude of the latter, who vainly seek to reduce every thing of living as well as of inanimate nature under the dominion of mathematical and arithmetical laws. Of this party, *Andral* is perhaps the head in medical, as *Guizot* is in political, science.

"Unable to characterise the fever, in a satisfactory manner, by any single anatomical fact, the gentlemen of this school have not the courage to characterise it openly by the expression of any vital phenomenon, as stupor; they are afraid of appearing too much of vitalists, if they did so; and therefore, as it would be rather ridiculous to give the name of *typhus* to a multitude of trifling febrile diseases, which no more resemble the genuine typhus fever than the bite of a flea does an attack of apoplexy, they have happily bethought themselves of the word 'typhoid'—a word which, expressing only a vague analogy, was supposed might be applied to all fevers, which they despaired of being able to characterise by any local lesions."

M. *Cayol* then criticises, with a most malevolent ingenuity, the work of M. *Louis*—entitled, "Anatomical, Pathological, and Therapeutic Researches on the Diseases known under the names of Typhoid, Putrid, Adynamic, Ataxic, Bilious and Mucous Fever, of Gastro-enteritis, Dothinenteritis, Follicular Enteritis, &c. compared with the most common Acute Diseases"—and exposes, with no less truth than severity, the egregious errors that the anatomical physicians of the present day have committed. "M. *Louis* has," he says, "with much more zeal than success, laboured to determine the exact necroscopic phenomena by which—(to use his own language)—*acute typhoid diseases* may be distinguished from *acute non-typhoid diseases*. Can any thing be more fanciful and arbitrary than this *à priori* division of diseases? Instead of taking his point of departure from something known and established, he assumes an imaginary line, and vainly hopes to solve a difficult problem by an insignificant and valueless word: certainly never was there a more complete confusion of ideas in a writer's brain than this. Who can believe that, in the category of *typhoid acute diseases*, M. *Louis* has not, perhaps, quite unconsciously, admitted on the one hand some inflammatory diseases, and on the other hand some diseases that are not really typhoid? If any one could believe this, his mind will be at once disabused by reading the author's own observations; for we find from his work that in nineteen cases of *typhoid fever* there was found on dissection more or less decided splenisation or carnification of the lungs, that in several other cases tubercles or other pulmonary lesions existed, and in short that, out of the 45 cases of alleged fever that are described, these organs were sound only in 15, and in most of them there was some disease of the encephalon also at the same time. To take the other category of diseases, those which are arbitrarily designated as *non-typhoid*, it is possible to imagine that, among all the cases of peripneumonia, angina, scarlatina, apoplexy, and more especially still of protracted chronic disease, there were not many that had as much of a typhoid character as the contents of the other category?

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"Let us now see what is the grand conclusion which M. *Louis* draws from all his arithmetical calculations and comparisons, touching the puzzling question at issue—the anatomical or material characteristic of typhoid fever. The answer, which he gives is, that we find a morbid alteration of the plaques elliptiques," (the glands of *Peyer*) of the small intestines in all patients who have died of *typhoid*, but not in those who have died of *non-typhoid* diseases. True, among many of the second class, we may meet with ulcerations in the intestines, and these ulcerations are even sometimes accompanied with swelling and redness of the mesenteric glands; but then, be it remembered, these ulcerations do not affect precisely the "plaques elliptiques;" and there lies the grand difference! Be careful not to confound in practice diseases of so very dissimilar a nature; the mistake might be most serious!

That it may not be supposed by any that we are at all wronging M. *Louis* by these remarks, we shall let him announce his discovery in his own words:—"The elliptic *plaques* of the small intestines having been found to exhibit a morbid alteration only in those persons who have died of the typhoid disease, and

this alteration being constant, usually very serious, and always developed according to the same law, whether the course of the disease has been rapid or not, and in some cases also being the only lesion present, it is necessary not only to regard it as *peculiar to the typoid affection, but as constituting its anatomical character*, just as much as tubercles do that of phthisis, whatever may have been the cause that has induced their formation;" and in another part of his work he says, "in the present day it is now ascertained that all the different kinds of fever (the plague excepted) enumerated by *Pinel*, form only one and the same disease, the anatomical character of which consists, not in an inflammation of the stomach and intestines, (as maintained by *Broussais*,) but in a profound and specific lesion of the 'plaques elliptiques' of the small bowels. Except this peculiar alteration, all the lesions of the enteric mucous membrane, which may be found in typhoid fever, are observed after other acute diseases also; and indeed the frequency with which they are met with in the two sets of cases, presents very little difference."

Having, as he supposes, determined this important point, M. *Louis* proceeds to discuss each symptom in the same manner of numerical analysis, and with the same minuteness of detail as he has already done with the various lesions of the different viscera found on dissection. "Four hundred mortal pages," says his redoubtable critic, "scarcely suffice him to register an infinite number of the most minute and wearisome details of pathological and semeiological facts—first isolated and by themselves, and then arranged in arithmetical tables, which can never either strike the mind or be fixed in the memory, from the utter absence of all logical cohesion between them. In such a manner as this, the observation of disease in the living body is more dry and barren than even that of necroscopic phenomena in the dead, as the one will not as readily yield itself to the isolation and arrangement of appearances as the other. Instead of having a series of living, and animated pictures, the study of diseases becomes nothing but a dead-letter."

M. *Cayol*, not satisfied with the attacks which he has already made on the anatomical theory of typhoid fever, returns once more, towards the close of his Letter, to the charge, and leaves M. *Louis* scarcely a foot to stand upon,—skilfully availing himself of the very weapons which the latter has put into his hands. "For the anatomical position, in respect to the cause of typhoid fever, to be true in the extended sense in which M *Louis* insists upon, it is obviously quite necessary that the alleged alteration of the intestinal glands should be found in every fatal case of fever, from the most mild to the most malignant form; and also that it be not (generally at least) present in other diseases which are *non-typhoid*. This is what the author alleges to be the fact. Let us now see how the assertion will stand examination.

"In the first place, M. *Louis* himself, it will be observed, excepts the plague (the adeno-nervous fever of *Pinel*,) and yet surely *it* is neither an acute phlegmasia, nor a simple eruptive disease. He excepts also from his catalogue of typhoid fevers not only the yellow fever of the West Indies and the epidemic cholera of the East, but also the 'typhus fever of English writers, and the fever of camps and jails!—in short, the very fever that is the prototype of the disease, which he is vainly striving to discover and describe Again, so sorely is he beset with the difficulties of his situation, that he is forced to admit the existence of a *latent* typhoid affection, to explain those cases in which the special alteration of the 'plaques elliptiques' is observed in patients who had not exhibited during life any of its usual symptoms, and also of a *simulated* typhoid lesion to explain other cases in which all these symptoms were present during life, and yet the special alteration of the 'plaques' was not discoverable on dissection—forgetting all the while that he had already committed himself by acknowledging that, 'if he ever came to observe a case in which all the symptoms now (actuellement) known of the typhoid fever existed, and where nevertheless after

death the Peyerian glands were not diseased, he would not rank such a case among those of typhoid fever.'

"In a subsequent part of his work, when treating of an epidemic typhus fever which prevailed in Philadelphia, in 1836, and in which the post-mortem examinations, performed with the greatest care, discovered no appearances of disease in the Peyerian or in the mesenteric glands, M. *Louis* is candid enough to declare that 'we cannot assign any seat to this disease, and that hither o it has no anatomical character,' and he adds these remarkable words—'one feels oneself naturally led by the history of this epidemic to say, with M. *Valleix*, that the *typhus fever* may be really considered as *an essential fever*.' Oh! oh! M. *Louis*; you admit then that there may be such a thing as an essential fever! If so, what then becomes of your system of elliptic 'plaques,' and of your exposition of typhoid fever?

"After so many exceptions, so many contradictions, so many beggings of the very question at issue, is it at all necessary to adduce any other arguments to prove that the anatomical position laid down by M. *Louis* is certainly not correct, in the wide and general acceptation that he applies to it.

"But even if we admitted the truth of this very position, that the Peyerian glands are really more or less deeply diseased in all fevers, inflammatory, bilious, nervous, &c., we might ask, does it necessarily follow that all these fevers—differing, as we know that they do, from each other in their causes, their symptoms, the accidents which they are apt to produce, and in the indications of their treatment—must be one and the same disease! This indeed may be answered in the affirmative by the mere anatomist, who is only engaged with the dead body, and who does not watch the phenomena of the living one; but certainly not by the physician who studies the history and progress of diseases with a view to their treatment—unless indeed, after the example of M. *Louis*, he wholly rejects all the experience of the past, to make a *tabula rasa* of medicine, and re-commence *ab ovo* our science with the dissection of the 'plaques elliptiques' of the small intestines."

M. *Cayol* at length comes to the most important part of his commentary, that which bears upon the *treatment* of typhoid fever, as laid down in M. *Louis*' work. His remarks are altogether so admirable that we must give them in his own words:

"This part of the work occupies 120 pages, and consists of seven chapters, which treat successively of blood-letting, of purgatives, of opium, of tonics, of blisters, and of ice applied to the head. On each of these remedies, we have again and again new arithmetical data, and nothing more. A given number of patients have been bled; so many have been purged; while a third set has been treated with opium; and so on. We are then told how many recovered, how many died under each mode of treatment:—among the latter what patients died on the 10th, or the 15th, or the 20th day; and among the former, what were the mild and what were the malignant cases.

"All this suggests the idea rather of a chemist operating upon a substance with a variety of re-agents, than of a physician giving the results of his clinical observations upon any disease in the living body. As might be foreseen, the arithmetical calculations of medical treatment have led the author himself to no positive conclusions. Indeed it would almost seem from his tables that the ratio of mortality is, *cæteris paribus*, nearly alike, whatever plan of treatment be followed! M. *Bouillaud's* celebrated system of blood-letting 'coup sur coup' does not reach a high mark in the numerical scale of his *confrere*; and as to other medications, nothing very positive is yet made out. We must wait for fresh figures and new tables."

Having thus shown the utter fallacy of the mode of investigation pursued by the anatomical physicians of the present day, M. *Cayol* puts the very pithy question, what now becomes of *typhoid fever?* Nothing, but a senseless phrase, so

better than the *peccant humour* of olden times. He strongly urges that it should be expunged from the vocabulary of medicine, unless an obvious and tangible meaning be affixed to it.

At the close of his letter, M. *Cayol* alludes to M. *Chomel's* work on typhoid fever in no very flattering terms: in his opinion it is one of the very worst guides to be put into the hands of a young physician. It professes to be based on statistical facts; and yet many of these alleged facts are in flagrant opposition to the best established truths. What shall we say of an author who lays down the following positions as the legitimate results of an extensive experience.

"A continued fever (the typhoid affection?) is never observed in persons beyond 40 years of life."

"It attacks a person only once during life. . . . The immunity is the consequence of a previous attack."

"It is never of shorter duration than 14 days."

"It is contagious, at least in the provinces."

"My pen," says M *Cayol*, "fails from my hand when I have to transcribe such matter, and there is not a little of it in the book of which I am now speaking."—*Revue Medicale.*

On the State of the Blood in Typhoid Fever.

During 1841, an epidemic Typhus prevailed in different districts of Italy. It was characterised by symptoms of unusually severe disturbance of the nervous system, as stupor, delirium, tetanus, convulsions, &c. Signor *Renzi* instituted an extensive series of researches to determine the state of the blood in the patients that were admitted into the Santa Maria Hospital at Naples. The field was an ample one, as it appears that between three hundred and four hundred patients were received in the course of the months of March, April and May. Being one of the physicians of the hospital, he fortunately availed himself of this favourable opportunity of testing the accuracy of the recent experiments of MM. *Andral* and *Guvarret* on the condition of the blood in fever—experiments which have excided no little stir among pathologists on the Continent, and of which we gave an ample summary in several of the late numbers of the Medico-Chirurgical Review. The conclusions, to which the Italian physican has come, go far to confirm the statements of his French brethren He ascertained, for example—1, that the coagulum of the blood became soft and oleaginous: 2, that the proportion of its fibrine was very sensiby diminished from the standard of health; 3, that the proportion of the red globules was larger than usual; and 4, that the cruor was more or less mixed with the serum, being partially dissolved in it, tinging it of a red colour, and being precipitated in the form of a pulverulent sediment. The hematosine had but little coherence with the red globules and the fibrine.

Besides these observations already announced by the French pathologists, Signor *Renzi* has added some that are peculiar to himself. According to his experiments, it appears that not only was the proportion of the red globules increased above the ordinary standard in health, but the greater number of them, besides being readily freed of their colouring matter, seemed to have lost their central nucleus, and appeared, in consequence, to the eye of the observer, to be less compact, less solid, and, so to speak, less living than is normally the case. In the second place, there existed, according to our author's observations, in the blood of typhus patients, a peculiar smell, which was somewhat like that given out by the blood of a sheep just beginning to become putrescent.

The alterations now alluded to, were of almost constant occurrence in the numerous experiments of Signor *Renzi*; and yet he is too sensible a physician to jump at once to the conclusion, that the cause of typhoid fever resides solely in

a change of the composition of the blood. Such a change cannot indeed fail to be regarded as the "point de depart" of a multitude of symptoms; but we must, at the same time, not fail to keep in remembrance the disorders of the nervous system—characterised by the stupor and the muscular prostration—and also the alterations of the mucous membrane of the intestines. In this point of view, typhus in considered—we need scarcely say, with perfect correctness—not as a mere local malady, but as a complex morbid state *sui generis*, quite distinct not only from any simple inflammatory, nervous, or cachectic disease; but also—and this is a most important feature in its history—from ordinary pyrexia (*synocha*, we presume the author alludes to) The alterations of the blood are so different in these two states (typhus and synocha,) that this character alone is sufficient to raise up between them an insuperable barrier to their union.

From all these considerations it may be fairly deduced that every variety of the *typhoid affection* (such a stupid expression!), notwithstanding their diversity of type, has two common and constant signs—viz: a peculiar alteration of the blood. as described above, and a marked prostration of the energies of the nervous and muscular systems.

These researches on the alteration of the circulating fluid in typhus fever afford a satisfactory explanation of several of the phenomena which occur during its course. It is well known that M. *Magendie* found that, in proportion as he deprived the blood of living animals of its normal proportion of fibrine, so was the disposition to the occurrence of hæmorrhages and congestions increased. On this principle we may account for the dangerous tendency to visceral engorgement which often occurs in certain fevers, as well as to the effusions of blood from the capillaries in different parts of the system, external as well as internal. The petechiæ, vibices, &c., so often observed in the course of malignant typhus, are probably owing to what the old physicans called a dissolved (*defibrinated*) state of the blood.—*Il Filiatre Sebezio.*

We may here very appropriately introduce two or three paragraphs from some remarks by a M. *Facen* (in the Italian Journal "Memoriale sulla Medicina Contemporanea") on the state of the blood in Agues. According to his observations, the blood, drawn at the commencement of an intermittent fever, scarcely, if at all, differs from its normal condition, unless the patient has been previously bled; and then the proportion of the serum is rather less than usual. The important alteration seems to be that, in almost all cases where the return of the paroxysms has been frequent. the tendency of the fibrine to coagulate firmly becomes greater and greater, until at length the blood acquires a perfect buffy crust, as in ordinary inflammatory diseases—the thickness and consistence of the crust varying, in different instances, according to the frequency, the severity, and the duration of the febrile paroxysms.

In accordance with the therapeutic indication afforded by this humoural change, M. *Facen* says, that the antiperiodic properties of cinchona are often very decidedly increased by the contemporaneous use of antiphlogistic means.

THE INFLUENCE OF ATMOSPHERIC AIR ON PUS.

It is a fact now well established that, if pus be exposed to the contact of the air, it soon acquires properties which render it strikingly deleterious, when it is conveyed into the torrent of the circulation, either by natural absorption or by direct injection into the veins. Healthy, or what used to be called *laudable*, pus may be injected into the veins of an animal without danger, provided the quantity be small; if too much be forced in, the pulmonary circulation seems to become mechanically obstructed, and the animal dies asphyxiated. When, however, purulent matter, that has become vitiated from exposure to the air, is

introduced, a veritable infectious (we believe that the author means by this term rather *cachectic* than *contagious*) disease of the whole system is induced; the animal almost invariably dies; and on dissection the principal viscera are found to be the seat of purulent deposits, or what have been called *metastatic abscesses*.

M. *Bonnet*, chief surgeon of the Hôtel Dieu at Lyons, published a memoir, in 1837, to prove that the symptoms of putridity, which are observed after injuries when the wound will not cicatrize, are owing to the absorption of sulphuretted hydrogen from the pus-discharging surface. No one can doubt that this gas is evolved, whenever animal matter becomes decomposed; and we daily witness its effects on the plaster used in strapping wounds; for this becomes black and discoloured in consequence of the action of the gas on the lead in its composition. There is however no good reason to believe that the small quantity of gas, that can be absorbed in the manner supposed by M. *Bonnet*, is the cause of the alarming constitutional symptoms, which not unfrequently supervene from the action of the atmospheric air on collections of purulent matter.

Other physiologists have suggested that another deleterious agent, hydrocyanic acid, may be generated during the process of suppuration; and they have supposed that the blue discolouration, which is not unfrequently noticed on the dressings of some sores, is owing to the presence of a cyanuret of iron in the discharge; but the recent experiments of Dr. *Conté* are certainly not favourable to this idea.

The cause of the fœtor of unhealthy pus has long been a puzzle to the medical inquirer. To say that it is due to a vital agency is leaving the difficulty quite unexplained. Every one is now aware that purulent matter becomes changed, at the expense, so to speak, of the constituents of the air; but hitherto not many experiments have been made to determine exactly the relations between the two. From the researches of Dr. *Conté* it seems to be clearly made out that the heat of the human body very decidedly promotes the decomposition of pus; for he found that it may be kept unchanged in a vessel for a much longer time than usual, if the temperature be low. (Perhaps a useful hint in the treatment of unhealthy abscesses may be derived from this circumstance: instead of using poultices and other warm applications, it may often be well to have recourse to cold lotions, &c.)

There is a certain local change in an ulcer itself which deserves more attention than it has hitherto received from surgeons—we allude to the inflammation of its surface and the destruction of the cicatrising membrane by the ammonia, which is apt to be generated under the dressings, and which is then kept confined by the strips of diachylon plaster that have been applied.

Therapeutic Suggestion.—Since the atmosphere may be so very injurious under some circumstances where organic products lodge in the tissues of the animal body, it might be well that surgeons would imitate the example of chemists in reference to certain substances, by keeping carefully protected from the agency of the disorganizing element, the atmospheric air, parts that are inflamed and the products that are secreted from them. Surgeons have differed a good deal among themselves as to the best mode of opening many abscesses. Of late much attention has been drawn to this subject by the ingenious and very useful suggestions of M. *Guerin* in the department of what has been called "Subcutaneous Surgery." No one can doubt but this mode of exploring certain purulent collections is far more safe than that of making a direct incision into them. It is unnecessary however to pursue this subject further at the present moment.

MELANCHOLY CASE OF SUDDEN DEATH, FROM THE INTRODUCTION OF AIR INTO THE VEIN.

A man, 58 years of age, was admitted into the hospital at Boulogne, with a large hard swelling, situated on the left side of the neck in the submaxillary region, extending downwards to within an inch or two of the clavicle. As it was believed to be of a scirrhus nature, the only chance of relief was pronounced to be from a surgical operation. A crucial incision was made through the integuments, and they were dissected back; then, partly with the scalpel, and partly with the fingers, the tumour was gradually detached from its connections with the subjacent parts. The blood-vessels were secured, as they chanced to be divided. The operator now holding the tumour, which was adherent only by a narrow pedicle, in his left hand, and drawing it gently out, had made the last stroke with the scalpel, when all on a sudden he heard a peculiar noise, a sort of *glouglou* sound, extending from the seat of the wound in the direction of the region of the heart. At the same moment the patient became very pale, and his breathing hurried; he uttered a moaning cry, and said, 'I am dying:' and true it was; for, in a minute afterwards, he had ceased to live. Such was the terrible instantaneousness of the accident, that, although its nature was at once recognised, nothing could be done to prevent it.

The finger was at once applied upon the wound, and the chest was powerfully compressed, but all to no purpose.

Dissection.—In the lower part of the wound, the internal jugular vein, at about two *centimetres* distance from the subclavian, was found to have been opened: the aperture still gaped. By stroking the vein from below upwards, a quantity of blood mixed with bubbles of air escaped. When the thorax was opened, the lungs remained permanently expanded, so as to fill both sides of the chest completely. The right cavities of the heart were found distended: they collapsed by compression, and at the same time there escaped from the opening in the subclavian vein blood mixed with air. The auricle and ventricle of this side, on being opened were found to contain a large quantity of bubbles of air mixed with fluid blood; and the same phenomenon was observed in the superior cava, and in the subclavian and axillary veins. The left ventricle was quite empty; there was neither air nor blood in it. The vessels even on the surface of the brain were found to contain, here and there, distinct bubbles of air.

The conclusions which the narrator draws from the statement of the case, are these:—

1. That the immediate cause of death was the wound of the internal jugular vein, and the admission, in consequence, of air into the circulation.
2. That the wound of this vein being kept open by the traction outwards of the tumour at the time, its proximity to the chest, and the enfeebled state of the patient—who had been much reduced by several attacks of hæmatemesis—all tended to favour the introduction of the air.
3. That, judging from the data furnished by the dissection, the suddenness of the death was attributable to the almost instantaneous cessation of the functions of circulation, respiration, and innervation.
4. That the introduction of the air into the circulation seems to have a special deleterious effect on the human subject; as, in none of the numerous experiments performed by MM. *Amussat*, *Nysten*, and *Magendie*, on lower animals, did death take place so rapidly as in the above case.—*L'Experience.*

In a recent number of the Annales de la Chirurgie, M. *Marchal* has made some remarks on the preceding case, and offered, at the same time, a new explanation of the cause of death in such accidents. That, in many cases, the death may be owing to the distention of the cavities of the heart and their consequent

paralysis is very probable; but can we, in this manner, account for the almost instantaneousness of the event in other cases?—an instantaneousness almost as great as from a stroke of lightning, or from the injection of a drop of strong prussic acid into the veins of an animal. In such circumstances—which, be it remembered, have been observed only in the human subject, and never in experiments upon the lower animals—we are led to suspect that there must have been a toxic or directly poisonous effect produced, just such as we find to follow the introduction of virulent matter into the circulation. M. *Marchal* suggests that carbonic acid may possibly be evolved, whenever atmospheric air is admitted into the cavities of the heart, and that it may be owing to the presence of this noxious gas that the rapidly fatal effects are owing. Why, he asks, should the blood on the right side of the heart, which is naturally dark, have become of a red colour?—unless some process of decarbonisation have taken place, the carbon having separated and become re-united with the oxygen of the introduced air.

There is a fact which appears to give some weight to this conjecture, and it certainly deserves notice—air, that has been respired, and which consequently contains an excess of carbonic acid, has been observed by many experimenters, to act much more rapidly and fatally, when injected into the veins of animals, than unchanged atmospheric air.

I must not, however, conceal from myself, adds our author, that the experiments of *Nysten* with carbonic acid and with the oxyde of carbon, are certainly not favourable to the view which I have now suggested; but then, may there not be considerable difference in the results produced, according as the carbonic acid is directly introduced into the circulation, or as it becomes disengaged within the cardiac cavities? The question, it must be confessed, is still *sub judice*.

M. *Marchal* closes his remarks by a practical observation or two on the treatment of those frightful cases, when the air becomes admitted into the circulation, during the performance of an operation. He strongly inculcates the greater safety of breaking down the deep-seated connections of a tumour in the neck with the fingers, or with any blunt instrument, than with a scalpel, and recommends that, in some cases, the tumour should be removed in different pieces rather than in its entire mass. Above all, when at length it is attached only by a narrow pedicle, let not the surgeon be in haste to divide this with the knife, if there be the slightest uncertainty as to the nature of the adhesions.

Had a ligature been previously passed round the pedicle, in the melancholy case related above, the accident might have been prevented: it was the last stroke of the bistoury that was followed by the frightful bubbling noise, and the almost immediate death of the patient. But is there nothing that a surgeon can do in such appalling circumstances, but to be the awe-struck spectator of the dreadful catastrophe? M. *Marchal* strongly advises the immediate employment of blood-letting: and if the blood cannot be obtained from a vein, let an artery be at once opened. He mentions that he has seen the good effects of this practice in several experiments upon horses, and, in an especial manner, on one occasion. The animal had fallen down senseless; a vein was opened, and the blood began to flow freely; in the course of a minute or two afterwards it started up, and scampered off across the field where the experiment was performed. M. *Nysten* has seen similar effects; and the hint is, therefore, not to be neglected.

The Scientific and Medical Movement in Germany.

Nations, like individuals, have their illusions; they are apt to be blind to their own conduct, and also to be deceived in judging of that of others. In the eyes of most Frenchmen, a German is necessarily a man of fanciful imagination, an

enemy of reality, fond of whatever is extraordinary, and not starting back even before the marvellous. This opinion is in part correct; but certainly not so absolutely, nor to such an extent, as is generally supposed. In truth, if we trace the progress of science in Germany, we shall speedily find how many striking refutations of this idea we shall meet with. In mathematical sciences, the land of *Euler* and *Leibnitz* has assuredly not degenerated in the present age; and the country, which still possesses such men as *Jacobi*, *Gauss*, and *Dirichet*, has nothing to fear from a comparison with others. Astronomy, unquestionably, is more cultivated beyond than on this side of the Rhine. Indefatigable observers may be found in every part of Germany, and many are the discoveries which have rewarded their labours. *Struve*, *Shumacher*, *Beer*, *Olbers*, *Bessel*, *Maedler* and *Littrów*, are esteemed the worthy successors of *Kepler* and *Copernicus*. In physical science, and more especially in chemistry, we have only to mention the names of *Berzelius*, *Rose*, *Mitscherlich*, and *Liebig*, to claim the highest rank for them. If we now examine the branch of medical research, which approaches most nearly to the exact sciences, we have occasion to remark a singular change that has of late years been going on in the progress of ideas, and in the direction of professional labours. At the commencement of the present century, the *philosophy of Nature* was in high estimation throughout Germany; and, under its influence, the anatomical writings of *Carus*, *Spix*, *Tiedemann*, *Meckel*, *Goethe*, &c., were composed—all showing a marked tendency to a novel and daring spirit of generalisation. Different parts of the body were shown to exhibit a somewhat similar type of organisation; and numerous relations, or marks of resemblances, between embryotic development and the structure of less highly organised beings, were pointed out with great ingenuity and skill. It has been to this spirit of inquiry that we owe the interesting researches of MM. *St. Hilaire*, *Serres*, *Blainville*, and others in France.

During the last ten years, a re-action seems to have been going on in this department of medical inquiry, throughout Germany. One might say that its anatomists have been retiring back from the brilliant horizon that was opening up before them. While, in France, our philosophers have been extending the limits of transcendental anatomy, our neighbours have returned to minute descriptions, to delicate analyses, and to works of classification, which are the basis of comparative anatomy, but are certainly not its final end and aim. They heap materials upon materials, and have become as timid in their generalising deductions as their predecessors were hasty and daring.

In all this, we trace a tendency to the adoption of what has been called the positive spirit of inquiry. It is evident that, by confining themselves to the mere discovery of facts, and to simply forming such conclusions as obviously flow from comparing these facts together, there is certainly not much risk of being deceived; but then we can never hope in this way to arrive at the discovery of any of the general laws of anatomical science.

In medicine it is difficult to say what is the real tendency, among the German physicians at the present time. Two huge errors, Magnetism and Homœopathy, have issued from their schools; but neither of them has had much influence on the general progress of the science. In all places, and at all times, the sick and ailing will be found to be more or less superstitious; in their own eyes, their disease has always something unusual in it; and then it occurs to their minds, why should the remedy, necessary for its cure, not be so likewise? Little is the confidence usually inspired by the physician, who reasons with his patient, and tries to prove to him that he may often effect a cure of his own malady, by merely following the indications of common sense. Who is there so simple as to hope, that he will argue people of fashion into the belief, that a regular and temperate regimen is the principal adjuvant of sound health? and that it is often much more important to derive the means of cure from the kitchen than from the druggist's shop? The success of ho-

mœopathy and animal magnetism is based on the moral infirmity of mankind, and will just continue until another repast be provided for the jaded appetite of human credulity.

Let us not, however, be too severe upon our Transrhenal neighbours on this score; but let us rather tell them, in a spirit of kindness, that they have too generally shown themselves tardy and unwilling to profit by the impulses which *Bichat*, *Pinel*, *Laennec*, and *Broussais* have successively given to medical science.

While everything has been sifted and examined among us, and every principle or doctrine, that has at any time been advanced, has been more or less frequently called in question, only to be the more accurately scrutinised; while effort upon effort has been made to re-construct the entire edifice of medical science, at one time by the aid of an improved classification, and at another by basing it on pathological anatomy, or on the localisation of diseases; while the French physicians have been engaged in the most animated controversies, and sparks and gleams of light have been constantly given out by the shock of opinions, our brethren in Germany have, with but few exceptions, persisted in the errors of a practice that is certainly not the most enlightened; wholly taken up with the study of mere symptoms without rising to the perception of the functional or organic lesions which give rise to them, they have always been striving to discover every minute secret of a system of therapeutics which at best is very problematical.

Hufeland may be considered as the representative of this epoch, and the naive assurance and air of confident satisfaction with which he lauds the remedies, which he employs in any particular case, make us only feel a regret that we cannot partake of a conviction that has been so easily acquired.

During the last few years however, a very decided re-action has been springing up among the medical men in some parts of Germany. The professors of the different universities, strong in their foreign languages, are making themselves well acquainted with all that is going on in other countries, and apply their minds with zeal to ascertain the truth of the novelties which they encounter in their reading. Pathological anatomy is cultivated with much zeal; large and beautiful works, on the model of that of *Cruveilhier*, have been published of late years; and at Vienna, more especially, Professor *Rokitansky* has given a strong impulse to the pursuit of this science.

We may consider Germany, in the present day, as the country where all the novel ideas and theories, which are broached in England and in France, are examined and discussed with calmness and unprejudiced patience.

No one system, no single opinion is dominant: all are received with impartiality indeed, but with caution and reserve. The humoural re-action, which is going on just now in our schools, will be received with favour by our neighbours; it is a return to the doctrines of the old medicine, a middle stage between the humourism of antiquity and the solidism of *Bichat* and his followers.

It thus appears that Germany is naturally called to judge between the various schools and systems of doctrine which divide French medicine; unless, indeed, there should appear one of those high and original geniuses, who, taking the start of their age, set all the world at rest for a time, because there is no one in a condition to oppose and overthrow their grand conceptions.—*Revue Medicale.*

CASE OF PELVIOTOMY; MURDEROUS OPERATION.

We observe, by some of the notices of Dr. *Lee*'s work on Clinical Midwifery (vide the last number of this Review,) in the Foreign Journals, that the French critics almost universally condemn the frequent use of craniotomy by British

accoucheurs in many cases of difficult labour, where they would have recourse either to pelviotomy or to the Cæsarian section. If we sought for an additional argument in favour of British practice in this respect, where could there be a more convincing one than in the narrative of the following dreadful case?

A rickety woman, 23 years of age, was received into the Hospital for Incurables in Naples in the ninth month of pregnancy, and after labour had commenced. The membranes had partially given way two or three days before, and there had been occasional returns of pain ever since.

By measuring the dimensions of the pelvis with the pelvimeter of *Baudelocque*, it was found that the sacro-pubic diameter was about three inches: but, as the base of the sacrum was much inclined over to the left side, the space between this point and the sciatic tuberosity was less than an inch across, so that the left side of the outlet was entirely useless, so to speak, for delivery.

The Cæsarian operation being deemed to be too dangerous, in consequence of the length of time that had elapsed since the waters had began to escape, it was determined to have recourse to the performance of pelviotomy. The method pursued was that first proposed by M. *Galbiati*, and which consists in dividing, first, the rami of the pubic and ischiatic bones on each side, and then cutting the interpubic cartilage across along the median line. The operator, on the present occasion, was M. *Ippolyto;* but M. *Galbiati* himself was present. He (the latter) wished the operation to be deferred for a few hours, until the os uteri was more fully dilated than it was; but his opinion was over-ruled.

The steps of the operation are not related; all that we are told is, that it was very tedious, but well borne by the poor patient, and that there was very little loss of blood.

After the operation the woman was put into a warm bath; the expulsive pains, in consequence, became gradually stronger, but unfortunately the neck and mouth of the uterus remained only imperfectly dilated! The ergot of rye was therefore administered!! the pains increased, and at length, 20 hours after the operation, delivery *per vias naturales* of a full sized child (which, however, unfortunately died during the labour,) took place!! Symptoms of peritonitis quickly ensued, and the poor woman died eight days afterwards.

Dissection.—The surface of the wound exhibited a gangrenous aspect; the peritoneal covering of the uterus was ecchymosed in several parts, and at one point there was a small quantity of purulent matter.

The comments by the editor of the journal, in which this case is reported, deserve to be given here, as showing the state of professional opinion in Italy, on one point of obstetrical practice.

"The operation was performed too soon. If it had been delayed until the os uteri was well dilated, the child might probably have been extracted alive immediately after the division of the pubis was affected.

"By thus abridging the duration of the patient's sufferings, and sparing the uterus twenty hours of contractions, it is not unlikely that the mother's life, as well as that of the child, might have been saved."—*Il Filiatre Sebezio.*

Remarks.—The narrative of the case is exceedingly meagre; but this does not much matter as regards the only important question, "ought such an operation, as that now alluded to, ever to be had recourse to?" We should say, decidedly not. Perish, rather, a thousand children than that the life of one mother should be so inevitably sacrificed, as it must be, by such a murderous proceeding.

Just think of it; first to cut through and dissect the soft parts; next saw or nip across the rami of the pubis or ischium on one side; then do the same on the other side; and, lastly, divide the symphysis of the pubis; to add to all these horrors, it would seem that the labour is, after this dreadful suffering, to be left to be completed by the natural efforts of the uterus!!

We have read of many barbarous proposals, and still more barbarous doings, by surgeons of the present day; but certainly this novel obstetrical operation, which we observe is called *bipubiotomy*, surpasses all in outrage on science as well as on humanity. Heaven defend us from such a proposal being ever so much as entertained for a moment in this country! The man who presumed to do so, would be surely scouted either as a monster of barbarity, or as a madman.—*Rev.*

On the Induction of Premature Labour.

The following observations by Professor *Stoltz* (of Strasbourg, we believe,) will be read with interest, more especially as they show that a change is at work in the minds of many obstetrical physicians on the Continent in reference to this delicate and highly responsible point of practice—the induction of premature labour in certain cases of dangerous parturition. It cannot, indeed, fail to be gratifying, and certainly it is not a little creditable, to British accoucheurs, that they not only were the first most clearly to establish the safety and utility of the practice in question, but, for very many years, have unflinchingly persevered in their convictions of what is right, nothwithstanding all the obloquy that has been cast upon them by their continental brethren.

Dr. *Stoltz* remarks, that the question under discussion "has now arrived at a complete solution," and he very candidly acknowledges that his countrymen have been the last to adopt the practice, and that it has not been without a good deal of resistance that they have at length yielded to the convincing arguments and proofs adduced by their opponents. He alludes to "the sudden change that has taken place in the sentiments of many leading accoucheurs in France during the last ten years, since the publication of M. *Burckhardt's* Memoir at Strasbourg, in 1830, and of his own paper, read before the Academy at Paris, in 1833;" and he then goes on to express his apprehensions, that his enthusiastic compatriots may—and indeed they have already began to do so—now carry their admiration of "this precious resource of our art," to as extravagant a length as they have hitherto done their condemnation of it. (How true of Monsieur Français on all occasions!)

"I have done my best," says he, "to prove the utility of the practice; I wish also to contribute to moderate the ardour of the enthusiasts, by showing them the rocks on which they are apt to fall, and to convince them that the operation is one which requires much reflection, and no little professional sagacity. To attain this end, I intend to place along side of the reports of successfal cases, those of others in which the practice has either failed, or been attended with serious consequences. The most perfect veracity and candour should be exhibited in the communication of all such facts: to deceive our fellow-practitioners on a matter of such high importance, is a scandal to the profession and a most grievous offence against humanity."

Before relating any new cases, Dr. *Stoltz* gives a brief account of the progress which the question has made in France since the publication of his Memoir in 1835.

M. *Banchereau*, a pupil of the faculty of Paris, defended in 1836 a Dissertation, entitled "On the Induction of Premature Labour in cases of Contraction of the Pelvis" It was, however, merely a copy of Dr. *Stoltz*'s Memoir: and the author neglected to mention that he (Dr. S.) was the first to perform the operation in France, and this at a period, too, when it was still considered as a crime by the law.

In 1837, there appeared a dissertation on the subject at Montpelier. Dr. *Figueira*, of Maderia, presented to the Faculty of Medicine in the months of this year, a work, entitled "Study of Artificial Premature Labour." At the close of

his work, the author relates a case of Professor *Lovati*, taken from the review of the Obstetrical Hospital of Pavia, in 1830–31.

In the course of the same year (1837) Professor *Villeneuve*, of Marseilles, published a report of the midwifery practice of the Maternity Hospital of that city, during the years 1835 and 1836, and in that report we find recorded a very interesting case, where premature labour was induced at the end of the eighth month in a rickety girl, whose pelvis was considerably deformed: a living child was born, and it survived at the time of the mother leaving the hospital.—*Gazette Medicale*, 1837, p. 107.)

"This," says Dr. *Stoltz*, "is the third case which belongs to France."

In 1840, M. *Caseaux* published his "Theoretical and Practical Treatise on the Art of Midwifery," and therein expressed his decided approval of the practice.

Professor *Moreau*, also, in his work (1840–41,) alludes to the question, and without directly opposing the propriety of the practice, he surrounds it with numerous restrictions which very clearly prove, that the author is rather of the opinion of the school of *Baudelocque*, than of that of modern accoucheurs. Lastly M. *Chailly*, who has recently published a Treatise on Midwifery, expressly approves of the induction of premature labour in certain cases of difficulty, and admits that the operation has hitherto been resisted so long only from a foolish prejudice.

We may therefore, says Dr. *Stoltz*, safely affirm, that there are not many accoucheurs in France who still adhere to the doctrine of the *Boudelocque* school; but, on the contrary, that the induction of premature labour is very generally recognised by them, as a resource of the highest importance in the art of midwifery.

The change of opinion that has come over some medical jurists, in reference to this question, is rather amusing. One writer, who very peremptorily condemned the operation in the first edition of his work, pronounces a pompous eulogium upon it in the second; and Professor *Orfila*, who was one of the commissioners of the Academy that considered the operation as unwarrantable under any circumstances, has frankly acknowledged his error in the third edition of his Treatise on Legal Medicine. (1836, t. II. p. 347,) and now admits that "however plausible the arguments of M. *Capuron*, and others, may seem to be, there are unquestionably certain cases in which premature labour should be induced, in the hope of saving both mother and child."

OBSTETRICAL CASES BY BAUDELOCQUE; PROPOSAL TO TIE THE INTERNAL ILIAC ARTERY IN UTERINE HÆMORRHAGE: THE OPERATION OF ELYTROTOMY.

We have rarely read a medical paper that has astonished us so much as the one from which the following observations are taken. M. *Baudelocque* is nephew, we believe, of the famous Parisian accoucheur of that name, and is himself now a prominent professor of midwifery in the French Metropolis.

After some prefatory remarks on different forms of hæmorrhage from the uterus and vagina in pregnant women, he thus suggests the propriety of having recourse to a surgical operation, when other means have been tried without avail.

"I am of opinion," says he, "that it may be sometimes expedient to tie one of the internal iliac arteries, when the object of the accoucheur is to prevent, or to arrest, alarming hæmorrhage, whether this be arterial or venous, in the following cases:—

"1. In super-pelvic elytrotomy—(section of the vagina)—an operation which I

was the first, in France, to suggest, in 1825, and which I performed on one woman during labour, in 1829.

"2. In some cases of extra-uterine pregnancy, to prevent the *arterial* hæmorrhage which necessarily occurs, if the placenta be withdrawn immediately after the extraction of the fœtus.

"3. In cases of sudden rupture of the vagina, in order to arrest the *venous* hæmorrhage, which is the immediate consequence of the accident.

"4. Lastly, in certain cases of hæmorrhage, arising from the rupture of sanguineous tumours situated deep in the vagina—an accident against which the compression of the parietes of the vagina would be unavailing, and where even pressure upon the aorta could not be kept up along enough to arrest the loss of blood."

M. *Baudelocque*, having announced these extraordinary proposals, proceeds to describe the operation of what he has called *elytrotomy*, or section of the vagina from above the pubis.

"The usual Cæsarian operation," says he, "having succeeded but in very few instances—in consequence, most probably, of the danger which always attends wounds of the peritoneum—it occurred to me in the course of the year 1825, that it would not be impossible to extract a child alive, and save the life of the mother too, in cases of deformity of the pelvis, by making an opening into one of the sides of the vagina from above, having previously made an incision through the tegumentary and muscular coverings in a line extending from the superior and anterior spinous process of the os ilii to about the middle of *Poupart's* ligament, and then detach the peritoneum from its cellular adhesions to the internal iliac muscle. The operator may now feel the common iliac blood-vessels situated on the edge of the psoas muscle; and, as soon as he can distinguish the internal iliac artery and vein, he is to separate them, the one from the other, and pass a strong ligature around the former. The ligature being secured, the point of the scalpel is to be now plunged into the external wall of the vagina, as low as possible beneath the *uretur* (which is usually situated about a centimetre and a-half below the cervix of the uterus;) the opening is to be enlarged with a probe-pointed bistoury, in a direction extending from the urinary bladder to the sacro-iliac synchondrosis.* This having been done, the operator now proceeds to extract the fœtus. If the head is found to present at the inlet of the pelvis in the usual position (supposing that the operation has been performed on the right side,) he will be able to lay hold of it with the forceps, 'et lui faire traverser, par la pointe du menton, l'incision faite au vagin.' It will be always possible to extract the fœtus by the incision in the vagina, if due care be taken to keep the small diameters of the head and trunk corresponding with the transverse diameter of this incision. The umbilical cord should not be divided until the child has begun to breathe. The placenta should be removed by the vagina, the cord having been previously passed back into it. This being effected, the two ends of the ligature round the internal iliac artery are to be

* That we may do no injustice to M. *Baudelocque* in describing this extraordinary operation, we shall give his own words, as we much fear that we do not quite understand all its steps. The external incisions having been made, the peritoneum exposed and separated from its adhesions to the iliac fossa, and the *internal* iliac artery being tied with a ligature consisting of several threads, "l'operateur enfonce la pointe du bistouri dans la paroi externe du vagin, en ayant la soin de le faire penetrer aussi bas que possible au-dessous de *l'uretere*, que si trouve à *un centimetre et demi au-dessous du col uterin;* puis il aggrandit avec un bistouri boutonné d'avant en arriere, ou de la vessie à la symphyse sacro-iliaque correspondante, et de haute en bas, l'incision faite au vagin; puis il procede à l'extraction du fœtus."

passed into the vagina, and brought outwardly: the lips of the wound are then to be brought and retained together by strips of adhesive plaster, and with a proper bandage. When the patient is placed in bed, she should be instructed to lie on the side opposite to that on which the incision has been made, with the view of preventing the effusion of the lochia into the cellular tissue of the pelvis. M. *Baudelocque* adds, that it might be well that she should suckle her child for at least the first month.

(Really, on reading this last piece of advice, we were irresistibly reminded of Mrs. *Glass's* very necessary instruction about making hare soup, first to catch your hare:—first save your patient's life, say we, and that of her child too, and then it will be time enough to talk about suckling it.)

Case 1.—The first occasion that M *Baudelocque* performed the operation of *supra-pubic elytrotomy* was in June, 1828.

The patient was a poor deformed, dwarfish creature, in the 36th year of her age, and at the full period of pregnancy with her first child. Labour had commenced; the os uteri was partially open, and there had been a free discharge of the waters for some time, before M. *Baudelocque* proceeded to perform the operation which we have described above. When the incision was made upon the walls of the vagina, (the internal iliac artery had not been tied,) a profuse hæmorrhage took place. In vain were all the attempts made to arrest the flow of blood; and, as the patient's strength seemed to be sinking, M. *Baudelocque* immediately performed the Cæsarian operation, and extracted a child that had recently died. The placenta was extracted by the wound in the abdomen, and this was afterwards brought together with six stitches.

A good deal of blood was lost upon making the incision through the uterus, and the hæmorrhage continued, although not in great quantity, after the patient had been placed in bed. "In one word," says M. *Baudelocque*, after some attempts at explanation, which it is unnecessary to re-produce, "she died in consequence of the venous hæmorrhage from the divided vagina and uterus." (Is it not rather strange that M. B. does not mention how long his patient survived the two dreadful operations to which she had been subjected? Did she sink within a few hours of it?)

He goes on to say, that it would have been very useful in this case, to have tied the internal iliac artery on the side on which the operation was performed, before the incision had been made into the vagina. "It is incontestable," he has the hardihood to add, "that by tying this artery, and waiting for a minute or two until the branches of the internal iliac vein were disengorged of their contents, the section of the vagina might have been made without the least loss of blood (?); and it may also be readily understood that, if instead of operating on the left side, where the vertebral column projected so much that there was not more than a centimetre and a-half between it and the os illi, the operation had been performed on the right side, I should have been able to have extracted the fœtus with the forceps, although the head presented itself at the inlet of the pelvis in the first position."

Such are the presumptuous reflections with which the history of this most lamentable and disgraceful case is closed. We trust that it will be long ere we again meet with anything at all like it.

Case 2.—*Extra-uterine Pregnancy; Section of the Vagina and the Fallopian Tube; Extraction of a Fœtus; Sudden Death.*

A healthy and robust married woman, 38 years of age, who had never had any children, observed that, about the beginning of April, 1831, her catamenia, which had hitherto been very regular, began to cease, and to be replaced by a scanty discharge of reddish serosity. Shortly afterwards, she had repeated

attacks of vomiting, and, at the same time, experienced sharp pains in the hypogastrium, which gradually increased in fulness.

This state of things continued for about four months and a-half, at which time she thought that she could feel the movements of a child. M. *Reis* was first applied to: on examination *per vaginam*, he found a tumour on the left side of the uterus. *Dupuytren*, who was afterwards consulted, could not have understood the nature of the case at all, for he prescribed mercurial frictions on the abdomen.

The tumour could be distinctly felt through the abdominal parietes, and its size seemed to be nearly as large as that of the uterus itself at the supposed period of pregnancy. The belly gradually became fuller and fuller, and every now and then attacks of sharp pain, accompanied with vomiting, came on. On the 4th of Nov. I visited, says M. *Baudelocque*, the patient, along with M. *Reis*, and could distinctly feel that there were two tumours in the abdomen; the larger one being on the left side, rising up as high as the umbilicus, and occupying almost the entire extent of the hypogastric region. The right or smaller tumour was of a rounded form and seemed to be somehow attached to the other. The mammæ were, and, according to the woman's report, had always been, quite flaccid. On examination of the vagina, even when the entire hand was introduced, no trace of the os tincæ could be felt, although, some months before, M. *Reis* had felt it quite distinctly. M. *Baudelocque* was of opinion, from a consideration of all the symptoms, that the larger tumour was formed by the pregnant uterus, and the smaller one by an extra-uterine conception in the right Fallopian tube. A distinct *bruit de soufflet*, it may be mentioned, was perceptible on the left side of the hypogastrium. I proposed, says M. B., to free (debarasser) the woman, by making an incision through the vagina and the right Fallopian tube, for the purpose of extracting the child, which I deemed to be alive. Her parents requested that there should be a consultation with another physician previously. M. *Recamier* was fixed upon. After a very careful examination, he also was of opinion that there was an extra-uterine pregnancy, and that the child should be extracted by an operation. Next day, this was performed in the following manner;—The left hand having been slowly and gradually introduced into the vagina, I laid hold of the tumour supposed to be formed by the Fallopian tube, and passed a long narrow bistoury upwards, till its point reached the most projecting point of the swelling. The instrument was then plunged fairly into it; and forthwith a quantity of sanguinolent water flowed out from the vagina. Carrying my forefinger into the cavity of the tumour, I felt the fœtus distinctly, but could not determine the exact position in which it was placed. The incision having been enlarged by means of a blunt-pointed bistoury, I then endeavoured to apply the forceps to the projecting part of the child. Considerable difficulty was experienced in effecting this; but at length it was accomplished, and I succeeded in bringing the fœtus down to the vulva.

It was a hip-presentation; the lower extremities and trunk were extracted with tolerable ease, but it required not a little force to bring the head through. The operation lasted between thirty and forty minutes in all. The child was discoloured, and its limbs quite flaccid; it made one deep inspiration. M. *Recamier conferred baptism upon it.*

The sequel of the case is given in the following words:—

"Up to this time, the woman did not seem to suffer much more pain than what often occurs during a difficult labour; but, *unfortunately for her*, I peeled off (decollai) the placenta, or, to be more exact, I tore it away piecemeal (arrachai partie par partie.) not being able to bring it out entire. In proportion as I tore it away, a very copious hæmorrhage followed.

"To arrest this strong pressure was made upon the abdomen, and plugs of charpie were introduced into the cavity, but without success. By the advice of M. *Recamier*, I passed an œsophageal tube well up, and injected cold water into

the sac; but this, too, failed; and the woman, becoming gradually more and more exhausted, at last expired *quelques moments après l'arrachement du placenta.*"

On opening the abdomen, a large tumour, whose sides had partially collapsed, was found to extend fairly from one side to the other, and to fill up entirely the upper part of the pelvis. It was formed by the left Fallopian tube, which had become so much dilated upwards as to rise above the level of the umbilicus. The uterus, also, was considerably enlarged to about the size it usually is between the fourth and fifth months of pregnancy; its cavity was lined with a membranous covering, and in the substance of its fundus there was a fibrous tumour larger than a hen's egg.

It thus appears, that the diagnosis of the case, formed by MM. *Baudelocque* and *Recamier*, was not at all correct; and that the large swelling felt on the left side of the abdomen was from the dilated Fallopian tube and not from the uterus —in the cavity of which there was no product of conception at all, as had been imagined.

M. *Baudelocque* proceeds to state how he would act in another such case, as the lamentable one now recorded. It is unnecessary to follow him in his disquisition on this subject, as it seems to us, that any remarks of his are not likely to have much weight even with his own countrymen, far less with any British practitioner. As may almost be anticipated, he gives the preference to *his own operation* of elytrotomy over any other in cases of pregnancy within the Fallopian tube, as well as in those of impracticable labour from deformity of the pelvis.

Case 3.—The third case reported in this memoir by M. *Baudelocque*, is not less deserving of attention than the former two, as giving us some insight into the practice of French accoucheurs in cases of difficult parturition. We therefore request our readers' attention to this report, in order that they may be able to determine for themselves the respective merits of the advices laid down in the works of British and of Continental writers on Midwifery in the present day.

M. *Baudelocque* was summoned by a brother practitioner to a case of shoulder-presentation, where repeated attempts to turn and extract the child had been already made. On passing his hand up the vagina, he found that the canal was lacerated (to what extent is not mentioned.) As the uterus was contracting strongly at the time, he recommended that the woman should be first bled. This was done; and he then, but with much difficulty, effected the turning and delivery of the child. Two or three hours subsequently some very awkward symptoms—vomiting, great anxiety, rapid pulse, pallor of the face, and cold sweats—supervened.

The attendant practitioner, although evidently much alarmed, attributed them either to "un epuissement nerveux," or to the "introduction de l'air dans les veines de l'uterus." He wrote off immediately to M. *Baudelocque*, requesting him to state *what was his view of the case, what authors might be best consulted on the subject, and what treatment would be most expedient.* (!)

The woman died soon afterwards.

On dissection, a considerable extravasation of blood was found within the peritoneal cavity near the vaginal laceration, *which extended from the left side of the bladder to the sacro-iliac symphysis, and consequently involved the peritoneum.*

Although most British accoucheurs would decidedly disapprove of the practice pursued, even by M. *Baudelocque*—not to mention that of the other medical man—in the present instance, and would have had recourse at once to embryotomy and speedy extraction of the fœtus, instead of first lowering the woman's strength by a copious bleeding, (she being at the time exceedingly exhausted,)

and then turning the child when the vagina was lacerated, we really did intend to have passed this case over without any censuring comments, till we came to about the close of the report, and, reader, what do you suppose we found there? We must give the author's own words:—

"How much I regret that I had not sooner had the idea of tying the internal iliac artery! I should certainly have performed the operation on this patient. I should have made an incision in the left costo-iliac region, separated the peritoneum from the iliac fossa, and have tied the internal iliac artery, after having cleaned out (nettoyé) the peritoneal cavity of the blood which it contained; then, master of the venous hæmorrhage, I should have extracted the child through the laceration in the vagina, instead of turning it and bringing it out in the usual way, or, perhaps, I should have done better by dividing the neck of the fœtus, and then extracting the head either by the pelvis or by the wound in the vagina: at all events, I should avoid turning the child, in order not to be obliged to have recourse to bleeding. By acting in this manner, I might have prolonged, if not saved, the life of this patient, and then I should have treated her for the peritonitis, which must necessarily have supervened on the rupture of the vagina." (!)—*Journal des Connois Medicales, Janvier*, 1842.

M. Civiale on Contractions of the Urethra.

The following letter was recently read before the Academy of Medicine:—"I have the honour to submit a memoir in which I have examined the following three important questions—What are the morbid states which constitute urethral contractions? To what material or organic effects do they give rise, when they are neglected? What are the evils that may be occasioned by the therapeutic instructions contained in most surgical works?

"By collating the numerous facts recorded in different books with the results of my own experience, during an extensive practice for the last 20 years, and also with the observations I have recently made in my examination of the rich museums of London, I hope to be able to throw light upon some disputed points in the pathology of the urinary organs.

"1. It is generally imagined that the organic lesion, which constitutes the stricture, is an accidental formation developed on the internal surface of the urethra, and the removal or destruction of which is necessary for effecting a cure. Now I have distinctly made out that the morbid alteration, instead of being merely situated on the inner surface of the canal, usually affects the substance of its parietes; and that the mucous membrane covering it does not exhibit any sensible difference from its normal condition in other parts of the passage. Does not this circumstance alone show the error of the accredited methods of treatment, which, it is obvious, cannot remove the morbid formation, unless by destroying the very walls of the urethra.

"2. The seat of stricture has not hitherto been accurately determined. It has usually been alleged to be most frequent in the membranous part of the urethra; whereas I have proved that it is rarely or never in this part. Hence it follows, as a necessary therapeutic consequence, that, by acting with caustic or with any cutting instrument there, the surgeon is applying his remedies on a part that is sound, and not on that which is really diseased.

"3. The same remedial means have usually been applied to all strictures alike, without reference to the part of the canal that may be affected. Now I have demonstrated that the nature of strictures differs a good deal according to their seat, whether this be at the meatus, in the spongy part, or in the sub pubic curvature of the canal—the three most frequent seats of the contraction;—and consequently that a different line of treatment is required for each.

"4. It had been long remarked that strictures of the urethra, in which the degree of contraction was nearly the same, produced very different effects, even in cases which were apparently very analogous to each other; but the cause of such difference was never satisfactorily understood. I have shown that this depends upon the condition of the urinary bladder, which in some cases becomes atrophied and in others hypertrophied—a distinction of the very highest importance in reference to the diagnosis and treatment of the disease, since the lesions, that are apt to occur in the deep-seated part of the canal, are not and indeed cannot be alike in the two sets of cases.

"5. It is generally supposed that the chief organic alterations exist in the contracted portion of the urethra. This opinion is incorrect; for unquestionably the most serious disorders are usually seated behind the seat of stricture. It is of great importance to attend to this circumstance; to discover the real seat of a disease is the first great step to its cure; and, if the case be unmanageable, the scientific surgeon avoids tormenting his patient with the trial of various expedients, the use of which too often merely aggravates the evil.

"6. It was not only the seat, but also the real nature, of the disorders that are apt to occur in the deep-seated part of the urethra behind the point of stricture, that required to be accurately determined. This, I consider, I have done, by disclosing the long catalogue not only of chronic inflammations apt to supervene in this region of the canal and in the neck and body of the bladder, but also of the ulcerations, the abscesses, and the attendant urinary infiltrations; and again of the dilatations of the prostatic and seminiferous ducts, and of the numerous morbid states to which the prostate gland and the neck of the bladder are subject—a class of affections hitherto but ill understood, but which certainly deserve the very greatest attention. The numerous facts which I have collected together, must tend to throw not a little light upon this obscure department of surgical pathology, and to suggest some most useful hints for the successful treatment of many of the disorders in question.

"7. I have devoted my attention in an especial manner to pointing out the numerous mischiefs that are often produced by the use of the catheter, and of other curative means that are so frequently resorted to. You have only to cast your eyes on this large collection of pathological specimens to be struck with the great frequency of rupture of the urethra and the consequent production of false passages about the neck of the bladder, and in the part of the canal behind the seat of stricture."

M. *Civiale* is not at all friendly to the use of caustic in the treatment of strictures of the urethra. "Authors," he says, "are as little agreed among themselves as to the mode of action of the caustic, as they are with respect to the proper method of applying it. The old surgeons, as well as the English of late years, by applying the caustic from before backwards, seem not to have been aware what part they destroyed and what they spared; while the modern partisans of the plan among ourselves, by cauterising in the opposite direction from within outwards, proceed with no better chance of success. The whole subject is enveloped in a cloud of most irrational empiricism."

At a subsequent meeting of the *Academy*, M. *Mercier* called in question the accuracy of most of the preceding statements. He insisted that M. *Civiale* was entirely mistaken in his assertion that surgeons had generally supposed that the seat of stricture was in the mucous coat of the urethra, and he appealed to a paper of his own, published in the Gazette Medicale of April, 1839, in which he laid down the position that "most contractions of the urethra, œsophagus, and rectum, depended upon a transformation of the substance of these canals into a fibrous tissue; and, in reference to the urethra in particular, that, as its spongy structure is only a dependence of the venous system, the process of inflammation produces the same phenomena in its cells as it does in the ordinary veins, viz. coagulation of the contained blood and obliteration of the tubes; subsequently

absorption of the coagulated blood, and ultimately the entire effacement of the cells." M. *Mercier* proceeds to say that, in his judgment, M. *Civiale* is unquestionably mistaken in asserting that strictures never occur in the membranous part of the urethra—an opinion however which has been held by *Dessault*, *Dupuytren*, *Amussat*, and other eminent surgeons. He then denies the accuracy of M. *Civiale's* statement that the urinary bladder ever becomes atrophied in cases of urethral stricture: as to its tendency of hypertrophy under such circumstances, the fact has been known for centuries. Most of the other alleged discoveries, M. *Mercier* remarks, will be found in the writings of *Charles Bell* and other surgeons.

Remarks.—It is pleasing every now and then to hear the criticisms of one French surgeon upon another. They are in general so egregiously ignorant of what has been done out of their own "belle patrie," that it is quite a relief to us when they mutually expose each other's blunders—in reference more especially to *discoveries*.

IODURETTED INJECTIONS IN HYDARTHROSIS, &c.

M. *Bonnet*, chief surgeon of the Hôtel Dieu, at Lyons, has for the last two years been trying the effect of injecting a solution of iodine in certain affections of the knee-joint. Before relating his experiments, he states that the idea of treating hydarthrosis with stimulating injections is by no means a novel one. *Boyer*, in his large work, alludes to a case where camphorated Goulard water was injected; and more recently M. *Jobert* has related three cases in which he made use of a weak spirituous solution for the same purpose. Of late years, solutions of iodine have come into much favour as injections for hydrocele and also for the fistulæ that are so frequent in the neighbourhood of diseased joints. * * * * * In puncturing a joint, the wound should always be as small as possible; and, in order that the introduction of the air may be prevented, the surgeon should first pinch up a fold of the integuments before introducing the trocar, so that the outward and inner wounds may not correspond with each other afterwards. The most convenient situation for making the puncture in the case of the knee-joint, is immediately above the patella; the limb should be fully extended at the time, in order that the articulating surfaces of the femur and tibia may be closely applied to each other. The fluid seldom flows out in a jet, as in cases of hydrocele, but only slowly and hesitatingly. It is unnecessary that the whole of it should be evacuated; indeed it is much better that it should not, and that a portion only be withdrawn. A useful precaution to prevent the entrance of the air is to keep the free end of the canula constantly pointing upwards. Solutions of iodine of very different strengths have been used as injections for hydrocele. M. *Velpeau* uses one part of the tincture and seven of water; occasionally the undiluted tincture has been employed. M. *Bonnet* used the diluted tincture in most of his cases of hydarthrosis; but then he took the precaution of discharging only a very small quantity of the articular fluid, leaving by far the greater part in the joint. Latterly he has preferred for this purpose a watery solution—1 part of iodine, 2 of the ioduret of potassium, and 8 of water—in order to avoid the possible coagulation of the articular serosity by the alcohol of the common tincture. The quantity injected should be very nearly the same as that of the fluid that has been withdrawn.

As the inevitable result of injecting a stimulating fluid into an articular cavity is an attack of acute arthritis, the surgeon must be ready to keep it within due bounds. In all my cases (of hydarthrosis), says M. *Bonnet*, the inflammation has subsided within a few days, and has never been followed by suppuration. A brief notice of these cases will be interesting.

Case 1.—A man, 28 years of age, was admitted into the hospital in September, 1841. His health had for two years suffered much from living in an unwholesome damp situation, and also from the effects of obstinate secondary syphilis; latterly he had been affected with rheumatic pains in most of his joints. At the period of his admission, the left knee was much swollen from an obvious accumulation of fluid within the joint. Although there were no symptoms of inflammation, the pain was often excessive, especially upon any movement of the limb, so as to keep the patient from sleeping. The strength was very much reduced; but still there was no fever present. A variety of remedies were tried; but none gave any decided relief. About five weeks after his admission into the hospital, I punctured the joint, says our author, with a trocar, and gave issue to a quantity (two *centilitres*) of serosity like that of hydrocele, and immediately afterwards injected 15 grammes of tincture of iodine, which I allowed to remain in. The pain produced was considerable, and, in the course of the day, the joint became swollen and very tender; the patient was restless and feverish during the night. But in the course of 24 or 36 hours, these symptoms abated, and then the patient experienced less pain than he did before the operation. By the sixth day, he was able to rise; and five days afterwards he could walk about the ward. The right knee now began to swell and be painful; and strange to say, as the left one became well, the other filled with fluid. On the 16th of October, twelve days only after the first operation, I performed the same manœuvre on the right, as I had done on the left joint. The inflammation that supervened this time was much more severe than on the former occasion, and indeed it was alarming. Forty leeches were applied round the joint, and then fomentations and poultices; but as the tension and pain became more and more severe towards evening, I determined to puncture the capsular ligament again: about two *centilitres* of serosity (which had no traces of iodine) flowed out through the canula. From this moment, all the suffering ceased, and, in the course of two days, the joint was not larger than it had been before the operation. So rapid was the abatement of all the symptoms that, after the lapse of another week, the man was able to leave the hospital, walking without difficulty, and quite cured of his double hydarthrosis. I have seen him repeatedly since, and find that the cure has remained permanent and complete.

(Surely the second operation was a most unwarrantable proceeding: to puncture and inject a large joint for a dropsy of a few days' standing!)

Case 2.—A young girl had been affected with dropsy of both knee-joints for three weeks, when she entered the hospital. She seldom suffered much pain in them, and she had always been able to walk, although with inconvenience. After a few days' residence in the hospital, both joints were punctured on the same day, and about 30 *grammes* of tincture of iodine were injected into each. The inflammatory re-action was intense; during the first night, the patient was restless, feverish, and now and then somewhat delirious; both joints were much swollen, and the integuments were hot, red and shining. For three days the acute, symptoms continued; they then subsided, and the swelling began to diminish. At this time I had to give up attendance at the hospital for several days, and when I resumed my duties on the 8th of June (about three weeks after the performance of the operation) I found that the patient had left the hospital nearly quite recovered.

Case 3.—A woman, 27 years of age, had been affected with hydarthrosis of both knees—the consequence apparently of a fall from a tree—for two years, when she came under M. *Bonnet's* care in June, 1842. After using blisters for a few days, M. *Bonnet* injected into each joint some of the following solution—1 part of iodine, 2 parts of hydriodate of potash, and 15 parts of water. The inflammation that followed was very intense; and for forty-eight hours the patient

could not get a wink of sleep. On the third day the pain and swelling began to abate, and by the end of another week no fluctuation could be perceived, and neither joint was much larger than in health. In the course of a month, the patient was able to leave the hospital; the swelling had almost quite disappeared, but the walking still remained difficult, although less so than before the operation.

In the *fourth* case, in addition to the hydarthrosis, which was the consequence of chronic rheumatism, there was a good deal of œdematous swelling of the integuments, and also "des fongosités dans la cavité synoviale." The complaint was of three months' standing. About 30 *grammes* of serosity were withdrawn from the joint, and as much tincture of iodine injected. The inflammatory reaction was by no means very great; not a drop of fluid oozed from the wound. As the swelling of the part did not sensibly subside, the joint was again punctured and injected, about five weeks after the first operation. This time, the inflammation excited was more severe; but the ultimate result was "une guerison presque complète."

M. *Bonnet*, after describing another case, goes on to state that in no instance in his practice has the iodine injection caused suppuration of the joint or any other severe accident; the inflammatory action, although sometimes very considerable, almost always subsided in two or three days. There is every reason therefore to believe that many cases of simple hydarthrosis may be most successfully treated in the manner now described.—*Bulletin de Therapeutique.*

ON THE USE OF THE HYDRIODATE OF POTASH IN RHEUMATISM.

Dr. *Aubrun* tells us that, for some years past, he has been in the habit of using the hydriodate in acute as well as in chronic rheumatism with marked success. The doses that he often exhibits are large—from one to four scruples and upwards in the course of the twenty four hours. He suggests that the probable cause of the salt disagreeing with certain people, even when administered in small quanties, is the admixture of free iodine with it—a substance which the stomach can seldom bear for any length of time with impunity. The only inconveniences which Dr. A. has observed to attend the use of the hydriodate are, a more or less copious salivation, a bitter taste in the mouth, and redness and a sense of heat in the throat. According to his experience, it is decidedly more efficacious against acute than against chronic rheumatism. He very generally premises the use of blood-letting and other antiphlogistic measures, and then exhibits the salt in solution along with some syrup of poppies. But if the constitution be feeble, recourse should be had at once to the hydriodate. Dr. A. remarks that patients, treated with this medicine, are less subject to stiffness or rigidity of the muscles and to swellings of the affected joints than when the cure of the disease has been obtained by the use of other remedies. He has never known any disagreeable effects to follow its administration, even when this was continued in full doses for a considerable time: no wasting of the testicles in the male, or of the mammæ in the female subject. He concludes, after relating several cases of severe acute rheumatism successfully treated, by saying that the action of the hydriodate is altogether depressing (hyposthenisant) and resolvent; and that its remedial powers seem to be the greatest when the constitution of the patient is weak, or after one or more blood-lettings, if the patient be robust and plethoric.—*Gazette Medicale.*

ON THE TREATMENT OF OPHTHALMIA WITH CAUSTICS.

M. *Bernard* of Paris has recently published a work, entitled, "the Ectrotic or abortive Method applied to the Treatment of Ophthalmia in general, and of Purulent Ophthalmia in particular." We extract from the Belgian Journal, Annales d'Oculistique, the following notice of its contents.

. . . . . "When M. *Sanson* first employed cauterisation and excision in the treatment of blenorrhagic ophthalmia, the practice, being at variance with all the established usages of the schools, was deemed rash and improper. The means that were hitherto almost invariably used, were free and repeated bloodletting, nauseants, calomel, &c.; and although they often failed in saving the eyes from total destruction, surgeons seemed to be but little disposed to make any change in their mode of treatment. To M. *Gouzée*, principal physician of the Military Hospital at Antwerp, the profession is not a little indebted for having most convincingly demonstrated the admirable efficacy of cauterisation in numerous cases of purulent ophthalmia. His great experience has led him to place little or no reliance on blood letting for the cure of this formidable disease; and, indeed, in not a few cases, it is in his opinion of positive mischief. Let it not, however, be supposed, that he altogether proscribes the use of this and of other antiphlogistic and soothing means: he admits their advantage as accessory remedies, but rejects them as the sole or principal means of cure. The nitrate of silver, applied at an early period of the disease, over the entire extent of the mucous surface of the eyelids, is *the* remedy, "par excellence," against gonorrhœal opythalmia. Its employment, directed by a prudent and experienced hand, is never followed by any inconvenience. The experience of M. *Ricord*, of Paris, fully confirms the accuracy of his Belgian *confrere's* statements. It is not of very much consequence whether the nitrate be applied in a solid or in a liquid form; each method has its advantages in particular cases. The great object of the surgeon should be to have recourse to the remedy before any sensible change has taken place in the texture of the cornea; if the disorganising process has once fairly commenced, we can have but little hope of saving the eye.

Remark.—It is rather droll that the name of *Guthrie* should not even be mentioned by our *confrere* on the other side of the Channel, in reference to what he calls the "ectrotic treatment" of purulent ophthalmia. We had always foolishly believed that our countryman had had something to do with the introduction of the practice in question.—(*Rev.*)

ON DISEASES OF THE MAMMA.

According to the inquiries of M. *Tanchon*, the frequency of mammary tumours is decidedly on the increase in France. In 1830, he says, 668 persons died of cancer in the department of the Seine, and in 1841 not fewer than 889. Of these numbers, 595 deaths occurred in Paris alone during the first, and 779 during the latter of these years.

M. *Tanchon* proposes various means to check the development of diseases of the mamma. Among other remedies, he recommends the employment of gentle compression with bags containing the following powder:—

Ioduret of potassium, 5 parts, powdered sponge, 10 parts, muriate of ammonia, 40 parts, and muriate of soda, 10 parts.

There is another discutient powder — composed of 20 parts of powdered sponge, 1 part of nitrate of potash, and 1 part of orris powder—which he

occasionally uses. He is strenuously opposed to the excision of the mamma, and to the application of any caustic or irritating substances to it.

ETIOLOGY OF DEFORMITIES; THE OPERATIONS OF MYOTOMY AND TENOTOMY; THE CLAIMS OF M. GUERIN, &c.

A short time ago, there was an unusually prolonged discussion on these subjects at the Royal Academy of Medicine.

As the discussion had been introduced by the two leading orthopœdists of Paris, MM. *Guerin* and *Bouvier*—both of whom have hygienic establishments or 'Maisons de Santé' in the environs—and seemed to be rather a dispute about some rival claims of these gentlemen than a theme for scientific remarks, the leading members were unwilling to take any part in it.

M. *Guerin*, however, having put forward some most extraordinary pretensions to certain alleged discoveries touching the pathological history as well as the remedial management of deformities of the limbs and other parts, MM. *Velpeau* and *Gerdy* thought it necessary to expose the egregious errors of that gentleman, errors which seemed to arise more from profound ignorance of what had been already done and published, that from wilful plagiarism or dishonesty. It may be interesting to the English reader to be made acquainted with the leading topics of a controversy that was carried on, for several meetings, with more than usual animation, if not acrimony, especially as some of them are objects of considerable interest to the physiologist and surgeon.

One of the grand discoveries of M. *Guerin*, on which he descants upon all occasions, is that almost every variety of deformity of the limbs and trunk is owing to morbid muscular contraction, that has taken place either during intra-uterine life or after birth. This doctrine is quite true of many, but certainly not of all, cases. M. *Gerdy* very ably proved that the causes of deformities are various: he reduced them under four heads:—1, irregularities in the primitive formation of the bones; 2, alterations ulterior to the formation of the bones; 3, fibrous or fibro-cellular indurations; and 4, muscular retraction. He remarked that M. *Guerin*, having devoted himself almost exclusively to one class only of diseases, is but ill qualified to take those large and comprehensive views of morbid action, which they only, who embrace the entire domain of disease in their practice, can duly comprehend. "A medical man, who gives himself up entirely to the practice of any speciality, cannot take in the entire horizon of science, or easily appreciate the numerous and varied causes of osseous irregularities."

It was not, however, to the doctrine itself—viz., that the most frequent cause of deformities, especially of such as are congenital, is a tonic contraction of the muscles—as to the claim of M. *Guerin* to its discovery, that the chief opposition was made. M. *Velpeau* most convincingly showed, by quotations from many well-known writers during the last 100 years, that the truth of this pathological dogma has been abundantly well known for a great length of time. One or two of these will suffice for our purpose.

B. Bell, in the sixth vol. of his System of Surgery, thus expresses himself: "The limbs are apt to be twisted in a variety of ways. In some cases, the bones are more or less diseased, and in others, the muscles are in a state of contraction; while, in a third set, both the bones and the muscles are affected"

. . . . . "The most frequent cause of the irregular conformation of the limbs in the contraction of the flexor muscles of the leg and fore-arm;" and in a subsequent passage he says, "since the deformity of the limbs is the effect either of the contraction of the muscles attached to them, or of curvature of the

bones, it is obvious that we must vary our remedies according to the nature of each case."

In a most interesting passage in his great work, M. *Beclard* thus announces his views as to the etiology of many congenital malformations. "I conclude," says he, "from all the observations which I have previously recorded, and the reflections to which they have given rise, that acephalous monsters have experienced, at an early period of intra-uterine life, an accidental disease which has caused the atrophy or the destruction of the medulla oblongata and upper part of the spinal marrow, and that all the irregularities which they exhibit are the natural and the more or less direct consequences of such a lesion."

But there is no author whose observations are altogether so lucid and conclusive on the subject which we are now considering as the late M. *Delpech*, the great ornament of the Montpelier school. In his Treatise on Orthomorphy—a work, says M. *Bonnet*, replete with most valuable ideas, which the researches of subsequent writers have only confirmed and developed—after relating a case of club-foot that had followed a disease of the internal popliteal nerve, remarks:—"This case shows that when a nerve, or any of its principal branches, happens to be exposed to an irritative action, it may then transmit the irritation to all the muscles under its influence, so that they deliver themselves up to a permanent effort of shortening, that is apt to induce a most striking change in the form, by altering the relation and mutual adaptation of the bones." . . . .

"What happens to a limb, may equally occur in the trunk under similar circumstances; and not only diseases of the nerves themselves, but those also of the medullary pulp, from which they arise, may exert the same influence on the muscles of the trunk, as on those of the limbs to which they are sent."

So much for the doctrine of muscular contraction being the cause of deformities, and for the claims of M. *Guerin* to any important discovery on the subject. We now proceed to make a few remarks on the "Character of Subcutaneous Wounds," a subject intimately connected with the treatment that of late years has been so much in vogue in all cases of distortion of the limbs, &c.

John Hunter was the first who very clearly and emphatically pointed out the marked difference in the results of lesions, according as the integuments are, or are not injured at the same time. As long as the affected parts are protected by their natural coverings from the external air, there is usually but little tendency to severe inflammatory action: when they are exposed to the air, the process of suppuration very generally is established. M. *Estor*, the clever translator of *John Bell's* work on Wounds, interpreting the English doctrine as to the phenomena which take place in a wound that is not exposed to the air, remarks; "The divided parts re-unite without being attended by any of the usual symptoms of inflammation, in virtue of a property similar to that which presides over the act of nutrition. This holds true in an especial manner if the injured tissues remain covered with their natural integuments, such injuries healing very generally without the supervention of any inflammatory disturbances."

Nowhere have the Hunterian doctrines been so well understood as in the school of Montpelier, and we are, therefore, not suprised to find that it was *Delpech*, a fervent admirer of the great English genius, who was the first to propose and perform the operation of dividing the tendo-Achillis by introducing a narrow bistoury under the skin, and leaving the divided tendon protected from exposure to the air. It was he who first gave practical effect to the important principle that had been propounded by *Hunter*—the principle that injuries of any part are rarely followed by much inflammatory action, when the skin over it remains unbroken. Indeed, we find that *Hunter* himself, on one occasion, divided the tendo-Achillis in a dog with a cataract needle, and subsequently that *Bell* recommended, in certain cases of contracted fingers, the section of the lateral digital ligaments by slipping a narrow bistoury under the skin.

Brodie also, more than thirty years ago, applied the same principle to the

treatment of the varicose veins; and lastly, *Delpech* distinctly announced the important proposition that the section of tendons is unaccompanied with any danger if it be performed by simply puncturing the skin. Since his time, *Stromeyer*, of Hanover, *Dieffenbach*, and MM *Guerin*, *Duval* and *Bouvier* have done much to bring the operation of tenotomy into repute. M. *Guerin* has certainly carried it to a very extravagant length, and there are really some grounds for the fear of M. *Velpeau*, that the operation may come 'a s'epancher a pleins bords dans la science et dans la pratique.' The success of tenotomy will depend much upon the particular tendon that requires to be divided. If, as in the case of the tendo-Achillis, the part be simply invested with cellular tissue, the operation will most probably be quite successful; but if, as in the case of a digital tendon, it be surrounded with a fibro-synovial sheath the adhesive process between the two divided ends is almost always imperfect, and the movements of the member are invariably more or less completely lost. M. *Bonnet* alludes to this difference in the following passage: "The cures effected by tenotomy in club-foot, wry-neck, &c., made many surgeons hope that the same success might attend the operation in contractions of the hands and fingers. Experience, however, has not confirmed these expectations; for we find that, in all the cases hitherto made public, the fingers may have been straightened, but their power of flexion has been lost."

M. *Doubovitski*, who himself submitted to this operation, has made some judicious reflections on this subject. He says: "Tenotomy has been applied to deformities of the upper extremity with the same hopes as it was to those of the lower one; and yet there is a material difference in the two cases. In the case of the latter, form or shape is almost everything; by rectifying this, we are certain that the patient may, more or less completely recover the use of the member; but in the former, the shape is only a secondary object—the power of using the member is the main one. The hand is an organ of prehension, the foot one of mere support: there lies the difference. For this reason there will be always greater success in tenotomy applied to the former than to the latter of these parts."

M. *Guerin*, however, has boldly asserted that the flexor tendons of the fingers may be divided either at the wrist, in the hand, or in the phalanges, and yet regain their normal movements. But this, like most of the other announcements of this gentleman, must be received with a good deal of reservation.—*Annales de la Chirurgie.*

M. Royer-Collard on Hygiene.

The title of the Memoir read at one of the recent sittings of the Academy of Medicine, from which the following extracts are made, is "Hygienic Organoplasty, or Comparative Hygiene, on the means of artificially modifying the forms of living things by regimen"

The scope of scientific hygiene is not merely to preserve health and prevent the development of disease; it aims also at ameliorating and perfecting the various instruments of life, and at promoting the full development of all the powers of the system. By means of judicious management, we can either moderate or excite the vital powers, augment or diminish their energy, and modify in a variety of ways the form, the size, and the activity of the several parts of living bodies. We all know how much has been done in this respect as regards plants and many of the lower animals; may not the human frame, although more curiously and wonderfully formed, be susceptible of somewhat similar changes by a due education of all its powers and faculties?

Regimen.

"Under this term we include not merely the diet, but also the regulation of

dress, of exposure to atmospheric changes, of the exercise of the moral and mental powers, and, lastly, of the functions of generation. As every part of the body, solid as well as fluid, is continually undergoing the processes of destruction and reparation, it is quite obvious that the substance or tissue of the different organs must materially depend upon the nature of the food that is taken into the stomach, and the powers of the system to assimilate it. Then, consider how much we are all influenced by the conditions of the weather, by the heat or cold of the atmosphere, its dryness or moisture, by the state of its electricity, &c.! The influence of exercise is not less conspicuous than either of these; a due degree of it quickens all the powers of nutrition, promoting the development of every part, animating all their functions, and causing the muscular system more especially to be developed with unusual vigour. Then again, that the *breed*, so to speak, of any tribe of animals is not a little modified by certain conditions in respect of the process of generation, will be admitted by every one who has examined the question. The character of the offspring is as much influenced by the state of the parent's health, as that of the individual is by the other circumstances we have just been mentioning. And lastly, as to the moral influences, their nature is indeed different, but their operation on the health is not less indisputable.

Influence of Food on Plants and Insects.

"Anatomy and physiology have been indebted for the chief progress, which they have made during the present century, to the comparative study of man with the lowera nimals. Pathology has scarcely yet entered upon this field of inquiry; and hygiene is still further in arrear; although it, perhaps more than any other department of medical study, might derive the most important advantages from this pursuit. The practice of agriculture, the rearing of cattle, and the education of domestic animals, have amassed a great treasure of the most interesting and instructive facts. But it is chiefly in the vegetable kingdom that the influence of cultivation is most conspicuous. What an innumerable number of varieties have often been obtained from a single species! Inert or even poisonous plants have been transformed into vehicles of nutritious food; small insignificant flowers into gorgeous heads of blossom: the sexual parts are converted into petals, leaves into fruit-buds, and roots into branches. M. *Liebig* tells us that the fineness of the Italian bonnet straw altogether depends upon cultivation, and adds that, "if the plant be supplied with carbonic acid and other matters which it requires, azote excepted, it will produce leaves but no grain, and sugar and fecula but no gluten." Modifications, scarcely less wonderful, have been observed to occur in the animal kingdom. M *Dumeril* has communicated to me some interesting facts respecting the changes which different kinds of food produce in the size and form of some insects. For example, the sexual character in bees seems to depend in a great measure on their mode of living and on the food which is supplied to them. Among the larvæ destined to become the females, only some of them acquire the attributes of their sex; the others remain neuter. The former are lodged in cells that are larger, thicker, and very different from the rest; and thither the working bees bring a pulpy nutritious food, the colour and savour of which are quite peculiar. It is chiefly this alimentation that causes the development of the generative organs in the queen or breeding bees. At the side of the cells occupied by them, are other cells occupied by other larvæ. Now these, without becoming precisely females, profit by their position; for they are generally larger than the strictly neuter bees, and moreover they afterwards produce a certain number of ova, the larvæ from which become the male insects. If by accident any of the female bees perish in the comb, the working bees forthwith set themselves to repair the loss; they enlarge the cells of two or three of the larvæ, and commence to bring them a supply of the *royal* nourishment: in this manner new females are provided for the supply of the hive. The knowledge of these circumstances has led physiologists to some most interesting

discoveries. It has been found that we can at will change the female into neuter, and the neuter into female larvæ. Similar phenomena have been observed in ants."

Development Arrested or Modified.

"In the higher classes of animals, our attention is drawn to the singular transformations which have been effected by artificial means in different animals while in the fœtal state. M. *Edwards* has succeeded in preventing tadpoles advancing to their complete development and becoming frogs, by depriving them of air and light; the animals continue to grow in size and strength, but still retain their fœtal form. In the case too of the eggs of the common fowl that are artificially hatched, it has been found that, if the heat be applied unequally, monstrosities (which may be 'calculées d'avance') are the result: in one case big extremities with a minute head, and in another a small body with a very big head, may be induced. As we approach the human species, the changes that may be effected by domestication acquire additional interest. Need we do more than merely allude to the very wonderful difference in different races of dogs and horses?—all the result of breeding and education. Not less remarkable are the changes that have been made in the breeds of sheep and large cattle, by the labours of the farmer. The principles on which all such changes have been effected are, on the one hand, the judicious selection of the animals for breeding, and, on the other, of the food with which they are provided. To such perfection are these matters understood in the present day, that the experienced farmer can at once tell you what sort of food the animal must be chiefly fed upon, according as the object may be to fatten it, or to increase the plumpness of the muscles, to promote the flow of the milk, or increase the growth of the wool or hair. The system has been applied even to some kinds of fish; for it has been found that, if they be castrated and then kept in damp soft moss, they will often acquire a most unusual size."

The Hygiene of Children.

"When we have studied successfully all the orders of the zoological scale, in the mechanism of their functions, and when we find that in each individual without exception there is constantly present the same physiological phenomenon, we may then, with almost perfect confidence, predict that this phenomenon will be observed in man also—who, although peculiar in his form and higher organisation, resembles other creatures in his general nature and in the predominant characters of his system. We are thus led to draw some important hygienic instructions from what we observe to take place in the case of the lower animals. How much of the future healthfulness of life depends upon the appropriate management, especially in respect of food, of the infant during the first twelve months! Most of the cases of rickets, and of deformities from other causes, are directly traceable to imperfect or improper nutrition during this early period."

The Effects of Training.

"The effect of the *training*, to which pugilists, jockeys, and others submit in order to bring themselves into what is called *condition*, is truly remarkable. All the subcutaneous fat becomes quickly absorbed; the cellular tissue becomes firm and unyielding, so that any blood that is extravasated under the skin is circumscribed to a small space; the skin becomes smooth and clear; the muscles are unusually firm and prominent; the belly small; the chest full and well expanded; the general sensibility of the body very materially diminished; and the spirits are buoyant and elastic. It might be supposed that men, who had frequently submitted to the regime of training, would suffer for such effects in their health afterwards; but it would seem not; for many of the leading English boxers have lived to a green old age, and retained much of their early vigour to the last

Jockeys are certainly more unfortunate; but then with them the great object is simply to diminish their weight, without any regard being paid to their muscular strength at the same time.

"In the case too of divers, we find that much of their skill depends upon the regimen to which they submit themselves. *Spalding* remarked, in his own case, that he always consumed the air in the diving bell more rapidly when he lived much on animal food and drank malt or spirituous liquors. Whenever he wished to remain an unusually long time under water, he ate nothing but vegetable food, and confined himself to water only for his beverage. Divers, like runners, use various means to develope their respiratory energies, by the regulation of their diet and exercise; and some of them have attained truly wonderful power in this respect."

After some explanatory remarks on the nature of *training*, as resorted to by the various *athletæ* to whom we have alluded, our author makes the following reflections:—

"Nothing is more simple, and withal nothing is more physiologically skilful, at the same time, than the regimen followed by these men. It is exactly the application of the famous Cyclic rule of the Methodists, related by Cœlius Aurelianus: 'recorporativis utendum viribus, ita ut, rejectis vitiocis carnibus ac renascentibus novis, reformata organa redeant ad sanitatem.' By purging away all offensive lodgements from the body, by bringing the skin into a soft smooth state, by sweating, and by then supplying the system with plenty of wholesome nutritious food, as well as by the regular use of moderate exercise, can we at all wonder that the body should acquire greater energy and power of endurance? It is only surprising that medical men should always be so far behind in reaching the natural and right way, and be obliged to learn from men of no education, and who have derived their skill only from repeated observation of a few simple facts. From the preceding statements it is not difficult to perceive that some valuable therapeutic suggestions may be derived. Many of the various forms or degrees of health may be successfully modified by a systematic regimen, carried out for a certain length of time with judgment and perseverance; and there are not a few morbid states of the constitution that might be more benefited by such a simple means, than by all the elaborate prescriptions of the most wise and learned."—*Gazette Medicale.*

M. DUMAS ON THE MUTUAL HARMONIES OF VEGETABLE AND ANIMAL LIFE.

For a length of time chemists have been in the habit of recognizing three neutral azotised constituents in animal bodies—albumen, fibrine, and caseine. About a twelvemonth ago, M. *Bousingault* and myself endeavoured to prove that these three component principles exist in plants also, and that therefore they pass already formed into the bodies of herbivorous animals, and thence come to enter into those of the carnivorous. According to the views which we then explained, it appeared to us that to plants only belongs the privilege of forming these products, which become afterwards assimilated with the bodies of animals. We have extended these principles to the formation even of fatty matters, which, in our opinion, have their origin solely in the vegetable world, and which subsequently play the part of a combustible in animal bodies. We pointed out the necessity of grouping together all the substances of organic chemistry which possess the property of passing into the state of lactic acid by fermentation, and which, like sugar and the feculeat grains, form so important a part of the food of man and the lower animals: they are all really and truly the products of plants alone, developed by the force of vegetable life. The following table exhibits our views on this subject:—

The Vegetable	*The Animal*
Produces neutral azotized matters.	Consumes neutral azotized matters.
————fatty matters.	————fatty matters.
————sugar, fecula, gum.	————sugar, fecula, gum.
Decomposes carbonic acid.	Produces carbonic acid.
————water.	————water.
————the ammoniacal salts.	————the ammoniacal salts.
Disengages oxygen.	————oxygen.*
Absorbs caloric.	Produces caloric.
Absorbs electricity.	————electricity.
Is an apparatus of reduction.	Is an apparatus of oxydation.
Is motionless.	Is locomotive.

A graminivorous bird finds in the corn that it lives upon all the elements necessary for its nutrition. A dog finds in bread whatever its organisation requires for its sustenance and growth. A cow finds in grass all the elements that serve not only for its own nourishment, but also for the formation of milk that is so rich in casein. It thus appears that cereal grains contain, in addition to their saccharine and amylaceous elements, the azotized materials which are found in all animal bodies.

"From what has been now said, we may draw the following two fundamental principles respecting the feeding of animals.

1. That neutral azotized materials constitute an indispensable element in the food of animals.

2. On the contrary, that animals can, to a certain point, do without fatty matters, and wholly without feculent and saccharine matters; but on this condition only, that the fatty substances are replaced by proportional quantities of fecula, and sugar, and *vice versâ*. The privation of fatty matter does not for a time compromise the life of the animal; nevertheless it exercises a peculiar effect which deserves a few words' notice. The necessity which all animals feel to have food that contains the neutral azotized matters which exist in their own organisation, shows pretty clearly that they cannot create these substances for themselves. But to place this fact in a more distinct point of view, we have only to follow these azotised matters after being received into the stomach, and to find out what is their final destination. Now it is not difficult to prove, that they are essentially represented by the urea—which in man and in the herbivora constitutes the leading element of the urinary secretion—and by the uric acid, which in the case of birds and reptiles plays the same part as the urea. Allowance being made for the excrementitious matter from the bowels, we may assume that an adult man absorbs every day an amount of neutral azotised matter sufficient to represent 15 or 16 *grammes* of azote—a quantity of azote found in about 30 or 32 *grammes* of urea. May we not very reasonably conclude that the azotised ingredients of our food served to produce this urea, and that every effort of the animal system is directed either to assimilate it to itself, when it has occasion for it, or to convert it into urea? The truth of this opinion becomes doubly sure when we remember that the study of the phenomena of respiration shows us that the fatty matters disappear from the animal organism in consequence of a veritable combustion, that the amylaceous and saccharine matters are also consumed, (brulés), and, lastly, that the difference between urea and the neutral animal matters from which it is derived, is most exactly represented by a phenomenon of combustion."

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* Is there not a mistake here? The living animal surely *consumes* rather than *produces* oxygen. There is probably a typographical error, as the repetition of the word "produces" in the next line would seem to imply that its converse had been used before.—*Rev.*

. . . . . "It clearly follows that the quantity of azote, which our food contains, gives us a clue to calculate the powers of assimilation and the quantity of aliment required for the due sustenance of life; the azotised matter being the substance that is essentially assimilable, and that which constitutes the web and woof, so to speak, of the whole system. As this element (the azote) is found almost entirely in the veins, under the form of urea, it remains for us to inquire what is the nature of the urea, and in what respect it differs from the neutral azotised matter whence it is derived. The beautiful researches of M. *Vohler* has shown us that the urea may be generated by a modification of the cyanuret of ammonia—itself formed by an oxyde of cyanogen and an oxyde of ammonium. There are thus given off from the animal body four different oxydes—carbonic acid, cyancic acid, the oxyde of ammonium; the two last combined and modified produce urea."

. . . . . "If we reflect on the circumstance that the blood constitutes a solution of the solid materials of the economy, we can readily understand how it is so important that the process of digestion should be incessantly restoring to the blood its constituent elements, in order that these elements, which are continually undergoing the act of combustion, should not be taken up again by the impoverished blood, and conveyed to the different organs which contain them. And to apply these principles to the azotised matters of which we have been treating, we should say that, if it is indispensable that the alimentation of a man should furnish a daily supply of from 100 to 120 grammes of dry azotised matters, it is because we know that nothing can prevent the system from losing in that period of time such a quantity of these matters by respiration and the combustion that is the consequence of it."

. . . . . "In concluding his remarks, M *Dumas* said:—"The Academy will be able to judge from the preceding observations what is the nature of the researches which I have been engaged in, with the view of establishing an exact balance between the quantity of fatty albuminous and saccharine matters consumed, and the amount of caloric produced by their combustion in the body of living animals. It will also see, and we hope with feelings of some interest, what experiments we have devoted our attention to, for the purpose of establishing on a certain basis the rules to be followed in calculating the expenses of maintaining our soldiers, work people, paupers, and prisoners. These are matters of the highest importance in an economical as well as in a medical point of view, and deserve attention from the political philosopher no less than from the physiological inquirer."

A TREATISE ON PATHOLOGICAL CHEMISTRY.

Such is the title of a work, recently published in Paris by Dr. *Lheritier*, on the Chemical Constitution of the Solids and Fluids of the Human Body, in a physiological and pathological point of view. We have not seen the work ourselves, and are indebted for our knowledge of its contents to a review of it in one of the French journals, from which we have made the following extracts:—

"Chemical analysis is now more than ever appealed to by medical men, to lift up the veil that covers so many of the mysterious wonders of animated nature from our knowledge. Already it has done much, and promises much more to the diligent inquirer. What the science of acoustics has, with the aid of the stethoscope, done in aiding our diagnosis of thoracic diseases, chemistry will do in explaining the leading phenomena of many other diseases. We have chemical lesions, and we have physical lesions; a medical chemistry as well as a medical physics. That chemical analysis, like acoustic, microscopic, or any kind of analysis, will lead to some valuable discoveries in physiology and pathology

few will in the present day be inclined to dispute. The great object must be to direct its course aright."

M. *Lheritier* first examines the chemical characters of the three animal fluids —the chyle, the lymph, and the blood—which are must immediately concerned in the phenomena of nutrition. His experiments on the chyle lead to the conclusion that this fluid is not more highly animalised in carnivorous than it is in herbivorous animals; the quantity of azote being nearly the same in both cases. The composition of the lymph is so similar to that of the chyle, that they are scarcely to be distinguished.

M. *Lheritier* is a firm believer in *Harvey's* and *Hunter's* doctrine of the vitality of the blood. In his opinion, it may be regarded as the centre and source of life with much more propriety than the nervous system; for the solids die instantaneously when deprived of blood, while some of them will continue to act even for hours after the destruction of the brain and spinal marrow. The numerous experiments, which he has performed on the coagulation of the blood, have led him to attribute this change entirely to a chemical agency, which does not commence until the blood has lost its vitality.*

As to the compositon of the circulating fluid, our auther says that, besides a certain amount of combined carbonic acid, it contains also a small portion of the free acid. The never-ceasing generation of this substance by the combination of the oxygen in the respired air with the elements contained in the blood is, in his opinion, the cause of animal heat.

M. *Lheritier* confirms the accuracy of many of MM. *Andral* and *Gavarret's* statements respecting the changes that the blood undergoes in acute diseases, and dwells especially upon one result of their experiments, viz. that the proportion of the red globules becomes decidedly diminished, when an acute disease has lasted for some time. This fact explains some phenomena that are otherwise not very intelligible. Enfeebled and weakly persons are more liable to inflammatory attacks than those who are more robust and plethoric, in consequence of the proportion of the fibrine to that of the red globules in their blood being relatively, although not actually, greater than in health.

The circumstance of the blood from a punctured vein, as in ordinary phlebotomy, becoming of a bright red colour after a certain amount has been drawn, has more than once announced to Dr. L. that it was high time to stop the hæmorrhage, unless syncope was wished for. He attributes this phenomenon to the impaired activity of the nervous system interfering with the accustomed change of the arterial into proper venous blood.

The blood of diabetic patients is found to contain saccharine matter, especially if the blood has been drawn soon after a meal; the coagulum is usually very soft, the proportion both of fibrine and red globules being below the normal standard.† In chlorosis the proportion of the red globules first, and subsequently, if the disease lasts long, of the fibrine also, becomes very considerably diminished: when

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* Dr. L, in a subsequent part of his work, suggests the practical precept, that *the more quickly that the process of coagulation is found to take place, the less blood should be drawn*, in any case. It is necessary to distinguish between the mere rapidity and the completeness of coagulation. For example, in adynamic fevers the blood coagulates more quickly than in inflammations; but the coagulation, as every one knows, is much less perfect. The slowness of the act of coagulation and an increase in the absolute or relative proportion of the fibrine to the other constituents of the blood, are the main causes of the formation of the buffy coat.

† Dr. *Lheritier* mentions that he has seen decidedly goods effects from powdered colomba root and the ioduret of iron, in conjunction with an animal diet, in several cases of diabetes mellitus.

the latter change takes place, there is very generally greater or less œdema of the lower extremities. Dr. L. has some peculiar notions on the state of the blood in genuine scurvy; he does not admit that this disease is the result of an alkaline condition of the fluids. He seems to have little faith in the curative effects of lemon and other vegetable juices, and suggests, in lieu of them, nitrate of potash and muriate of soda!—this almost reminds one of the proverbial advice to the drunkard to "take a hair of the dog that bit you,"—which he says are tonics and have a marked influence in reddening the blood.

Some of the remarks of Dr. L. on the changes of the urine in different diseases are interesting. He made many experiments on the albuminous state of this secretion, which, some years ago, was supposed to be pathognomonic of the *morbus Brightii*. It is now generally acknowledged that, in other diseases, especially in those of the heart and of the liver, the phenomenon is of not unfrequent occurrence. Whenever it is present, we have some reason to suspect that the state of the blood itself is more or less altered from the standard of health.—*Journal des Connoiss. Medico-Chirurg.*

MEMORANDA ON SUPPURATION.

The phenomena of the process of suppuration have been lately attracting much notice among many of the French pathologists. Two of the ablest inquirers are M. *Darcet* and M. *Conté*, both of whom have published very interesting memoirs on the subject. The former of these gentlemen has pointed out with great accuracy the changes which purulent matter undergoes on exposure to atmospheric air, and has deduced from his observations on this subject some ingenious conclusions touching the development of what have been called consecutive or metastatic abscesses.

If pus, he says, be exposed to oxygen, it soon separates into two parts—one nearly solid and membraniform, the other a sanious liquid of a dark colour and which gives off carbonic acid. If the action of the gas be continued, this liquid quickly putrifies, and emits a strong ammoniacal odour; the membranous portion remains nearly unchanged. When the former is injected into the veins of an animal, all the symptoms of an adynamic purulent infection of the system speedily make their appearance: the whole of the circulating mass becomes more or less completely vitiated. The poisonous action, which goes on "de proche à proche," is compared by M. *Darcet* to that of a leaven in a fermentable fluid.

When purulent deposits are absorbed, without giving rise to any constitutional disturbance, our author is of opinion that the matter is carried off by the kidneys; for the urine in such cases will be usually found to be more or less charged with albumen, as M. *Martin Solon* has observed to be the case at the period of the pustular desiccation in small-pox. Now, as the there is albumen in the liquid portion of purulent matter, we may naturally suppose that this element has passed with the serosity into the urinary secretion. The semi-solid membraniform portion remains, he thinks, behind in the seat of the abscess, and may afterwards be recognised, at least in some cases, as a yellow amorphous adipocire-like substance, such as *Dupuytren* and some other pathologists have observed in various organs, and especially in the brain. M. *Darcet* has several times inclosed some pupulent matter in a permeable bag, and then placed this among an absorbent powder; the fluid portion of the pus soon disappeared, and nothing was left behind but the solid membranous portion of which we have been speaking.

M. *Conté*, in his essay, has entered at some length into the history of *pyology*. It is often very useful in medical literature to look back upon what our distinguished predecessors have done; for really they seem to have been more acute-

ous, and certainly more unprejudiced, observers of the phenomena of nature than their more boastful children. Let us follow M. *Conté* in a few of his remarks.

Pringle, he says, has observed that the serosity of the blood, if exposed for some time to the temperature of the animal body, becomes turbid long before there is any appearance of putrescency, and deposits a white sediment not unlike to pus: he therefore concluded that it (pus) is derived from the watery portion of the blood. *Van Swieten* remarked that purulent matter exudes in a serous form; and *Nicholas Romagne*, in his thesis published at Edinburgh, distinctly maintained that it is from the serum of the blood alone that pus is formed. We know also that *John Hunter* and Sir *E. Home*—although their opinion was that pus is a secretion from the entire blood, and not merely from one part of it—have stated that, if we carefully prevent the pus from remaining on the surface of an ulcer by continually wiping it off, nothing but a transparent limpid serum is then secreted.

Would it be unreasonable to conjecture that purulent matter becomes acid in a few moments after being secreted, and that thereby its albumen becomes precipitated? This idea may appear very fanciful to many surgeons, who are but little conversant with the nature and results of chemical action; but let them remember that it may be with pus as it is with urine, which every one knows is quite transparent when voided, but may become thick and muddy almost immediately afterwards.

It is very possible that electricity may have something to do with the change. *Majendie* remarks, in his Treatise on Physiology, that "the action of the galvanic pile coagulates serum, and causes the development in it of globules which are very analogous with those of the blood."

We know that an abscess contains at first nothing but serum; subsequently there is a thin puriform fluid, like skimmed milk, and at length a thick and opaque pus (*Burdach.*) The same succession of phenomena is observed in the successive changes of the contents of a variolous pustule. May we not recognise in such facts as these a process altogether similar to that observed by *Hunter* and *Home* in ulcers, and also on the surface of mucous and serous membranes?

Let us now see whether chemistry affords any confirmation of these views?

In M. *Andral's* work on Pathological Anatomy, we meet with the following passage:—"Pus has been analysed by many chemists. *Schwilgué* found that it was composed of albumen in a peculiar condition, of extractive, of a fatty matter, and of various saline substances. According to this analysis, pus would seem to differ from the serum of the blood only by the peculiar state in which the albumen exists, and also by the presence of extractive matter. The nature of this last substance has not been well ascertained; some regarding it as an animal matter, not analogous to anything existing in the healthy body; while others view it as a mixture of albumen and fibrine, or as fibrine which has become spontaneously incoagulable and inorganisable. According to *Pearson*, it is an animal oxyde; according to others, it is of a cheesy character."

M. *Gendrin*, who has written so largely and elaborately on inflammation and its consequences, writes thus on the question under consideration:—"It seems to result from all our observations that laudable pus is composed of soluble albumen in small quantity, and of albumen united with fibrine: it is the union of these two substances that constitutes the pulverulent matter which is precipitated in water."

M. *Donné* is of opinion that the precipitate consists of albumen coagulated by muriatic acid—which, according to him, is always generated during inflammatory action.

While all authors are agreed as to the presence of albumen in pus, there is no little difference of opinion as to the existence or non-existence of fibrine in it. Many writers distinctly deny that it is present at all; and even those who believe otherwise are forced to admit that it exists in a peculiarly modified condition,

which gives it the appearance and somewhat of the character of cheesy matter. Does not this very circumstance of the fibrine—if indeed there be any at all present—being in an essentially altered state, confirm in some degree the idea that pus is derived mainly or entirely from the serum of the blood?

Supposing that the truth of this be admitted, the question now presents itself—in what manner does the serum become transformed into purulent matter?

Dr. *Conté* suggests the following explanation:

"It is admitted that, during the process of inflammation, the course of the globules of blood becomes slackened at first, and is afterwards completely arrested, so that they remain stagnant and obstruct the minute capillaries. In this state of things it may happen that the serosity of the blood, being the thinnest and most liquid portion, impelled by the *vis a tergo*, is still able to traverse (at least partially) the obstructed vessels, and then exudes from them, possessed of those properties which *Hunter* has so faithfully described.

If from the violence of the inflammatory action the life of the part be destroyed, the process of putrefaction quickly begins, the capillary vessels gorged with the blood-globules burst and allow the globules, along with the decomposed serosity, to escape; in this manner we may explain the formation of the brown-coloured and turbid sanies which flow from a part affected with gangrene."—*Gazette Medicale.*

MISCELLANEOUS NOTICES.

State of the Ovaries during Menstruation.

Some recent writers have alleged that each act of menstruation is accompanied with the rupture of one of the *Graafian* vesicles. In a case of very rapidly fatal fever, occurring in a young woman immediately after one of the catamenial periods,—reported by M. *Devay* in the L'Experience, No. 296—the following appearances were found on dissection. The outer surface of the right ovary was injected, and presented towards its upper edge a small lacerated opening, in which there lay a minute coagulum of blood that was still soft. On cutting through the substance of the ovary, there was observed another cicatricula of somewhat less recent date, and which contained a small sanguineous concretion of the size of a hemp-seed; three *Graafian* vesicles were counted.

The left ovary exhibited several scars of older date. The right Fallopian tube contained a little fluid blood; the left one was quite empty. Some sanguinolent mucous was observed on the inner surface of the uterus.

2. *French Letter Writing.*

Our neighbours seem always to be walking on stilts, when they approach even the very threshold of the Academy. Here is a letter from the "grande orthopœdiste," M. *Guerin*, to the President of this learned body.

"Sir,—If I deemed the honour to be admitted as a candidate to a vacant seat in the Academy only as a glorious recompense, I should be more than satisfied with the favour, with which my first 'candidature' was received. But I feel that I better appreciate the true character of this distinction, by regarding it as the most illustrious consecration that can be bestowed on scientific works and ideas. It is from this consideration, Monsieur le President, that I am induced to offer myself as a candidate for the seat now vacant in the department of medicine and surgery.

"The Academy is aware that, for several years past, I have been engaged in researches undertaken under its inspiration, researches which have given rise to a great number of novel applications in surgery. I should, therefore, but ill comprehend its intentions, and be especially ungrateful for the encouragement

which it has given to my labours, if I withdrew from a concours, where they may receive a new and powerful impulsion from its distinguished patronage. I take the liberty, therefore, to hope that the flattering reception which it condescended to give to my recent application, may be an additional inducement to examine with some interest and favour my titles in support of my "candidature' in surgery."

3. *Injection of Dropsical Joints, Cysts, &c.*

M. *Velpeau* announces that for some years past, he has been engaged in preparing "un grand travail," on the treatment of dropsical cysts by means of puncture and subsequent injection of the cavities with a solution of iodine. He has effected a cure in a number of cases of serous and sanguineous cysts in different parts of the body by this method. He has applied it with success in five cases of sacculated goitre, or hydrocele of the neck, as it has been called; and he has also tried it in a few cases of dropsy of the knee-joint.

At the date of his announcement, he had four patients, at La Charité Hospital, in whom he had injected the iodine solution into this articular cavity: "leur etat est très satisfaisant."

4. *Dog-killing for the Promotion of Science.*

We observe that M. *Bouvier*, one of the orthopœdist surgeons of Paris, has been entertaining the Academy with a report of some experiments which he had performed upon dogs, poor creatures, to ascertain the effects of dividing one or more of the tendons of the upper and lower extremities. In pointing out the application of the results of these experiments to the treatment of deformities, he very coolly characterises them (the experiments) as "a sort of researches which has the advantage of being followed soon afterwards by the microscopic examination of the parts, and which is not attended with the inconvenience of experimenting directly upon the human subject."—Cruel and cowardly!

Vegetable Morphology.

It is pleasing to pass from the revolting subject last mentioned, to the ever gay and attractive scene of the vegetable world; in which experiments indeed may be performed without cruelty to other beings, or hardening of our own hearts.

"What can be more interesting," says a recent French writer, "than the study of the metamorphoses which different parts of plants are subject to. Any one looking at the stamens of a rose, or of a ranunculus, would scarcely think of assimilating them with the leaves or petals of these plants; but if he examines the nymphæa or water-lily, he will be less surprised at being told that the one part (the stamen) is convertible into the other (the petal); for he will perceive, in the specimen before him, all the possible transitions between these two parts of the flower well characterised. Again, it is well known that excessive nourishment deprives many of the flowers of our gardens of their stamens, and causes them to change into elegant petals. If any doubt remained on this point, a most convincing proof of its reality is furnished by the Aquilegia or *Columbine*. Nothing can less resemble the spurred horns of its corolla than its small and slender stamens; yet, by cultivation, these latter are found to become metamorphosed into cornuted petals, which terminate in a spur; and, to prove the truth of this still more convincingly, we may often observe all the possible shades or degrees of transition between the stamen and the horn in one and the same flower.

"In the Canna, or Indian reed, we notice an equally striking illustration of the change; on one side there is often a simple unilocular anther to be seen, and on the other a petal in its place. . . . . We thus see that a stamen is nothing else but a metamorphosed petal; and as it (the petal) is only a variety

of a leaf, the stamen can be regarded as nothing more. A leaf enfeebled becomes a petal; and more enfeebled still, it becomes a stamen."

6. *Mutual Friendship of distinguished Anatomists and Painters.*

It is well known that the great painters in the age of Leo X. devoted much of their attention to the study of anatomy. *Leonardi da Vinci* made the drawings for the Anthropotomia of *Della Torre*, and *Michael Angelo* those for the similar work of his friend *Colombus*. The prince of painters, the divine *Raffaelle di Urbino*, devoted much of his time to the composition of a work on human and comparative myology; and on the other hand, *Francesco Fresconi*, the physician of three successive Popes, was a most accomplished sculptor; and *Beranger de Carpi*, one of the earliest advocates of the use of mercurial fumigations in the treatment of syphilis, was so ardent an admirer of the fine arts that, on several occasions, he would accept of no other fee except a fine painting or statue from his patients. *Vasari* tells us that the Cardinal *Colonna* was obliged to give a celebrated painting by *Raphael* to the art-loving-doctor, in payment for his professional aid.

Titian, with the assistance of one of his pupils, sketched the admirable drawings for the great work on anatomy by *Vesalius*. The great painter of Venice fully appreciated the merits of the young anatomist; for we find that, when he had finished the portraits of *Charles* V., *Francis* I., the Grand Signor *Soliman* and other crowned heads, he immediately commenced those of *Vesalius** and *Ariosto;* the aristocracy of talent appearing to him worthy of a place beside the aristocracy of rank.

7. *Important Academic Information.*

M. *Briquet* wrote to the Academy a month or two ago, announcing that quinine, in large doses, has the power of checking attacks of rheumatism, and intimating that he should soon send a memoir on the subject.

M. *Bouillaud* remarked, that rheumatism is usually a most rebellious disease, whatever mode of treatment be followed; and concluded by saying, that if M. *Briquet* can prove his assertion by well-established facts, he will render great service to science and humanity. M. *Martin-Solon* said that, according to his experience, no remedy is so efficacious as the nitrate of potash in very large doses —as much as 10 drachms may be administered in 24 hours. Usually in five days or so, the disease may be thus *jugé*. He also promised to send a memoir to the Academy on the question. (How very instructive!)

8. *A Medical Poem.*

The French are fairly entitled to bear the bell from all other nations, as the legitimate children of *Apollo*, the god alike of poetry and of medicine. Where is the country that has produced so many sons of song among her doctors as "La Belle France?" Two or three years ago we heard of a poem on the very *pathetic* subject of (what do you think, reader?) *syphilis;* and behold, now we have one, in six cantos, entitled "Code Moral du Medecin."

The present bard, Dr. *Andrevetan*, has the merit, if he cannot lay claim to any other, of having enriched the medical vocabulary with some choice phrases.

A few examples will suffice. In place of the common and every-day name of doctors, we are called *ministers of health, children of Chiron, disciples of the Centaur, sons of Lucina, neophytes of the god of Cos, priests of Hygeia, of Isis, and of Æsculapius, pontiffs of Apis and Osiris, favourites of Zelesphorus, children*

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* This celebrated portrait was bequeathed by Baron *Portal* to the Academy of Medicine, and is now hung up in their hall, immediately behind the president's chair.

of Apollo, successors of Atothis, &c. &c.!! So much for the *medecins*; now for the profession, *la medecine*. Sometimes it is called *the altar of the god of Epidaurus*, or the *sanctuary of Apollo*; at other times it becomes instinct with life and springs forth as the goddess *Panacea*, or *the Divine Hygeia*; or lastly, it is *the offspring of Phœbus*, or the *handmaid of Lucina*. The same richness of language pervades the work on other subjects. Chemistry is the *art of Hermes*; man is the *son of Japhet*; death is *the Daughter of Night*, or *Atropos*; fire is *the gift of Vulcan*; wine is *the nectar of Bacchus*; men of science are *the favourites of Minerva*, and soldiers are *the children of Mars*. Even the names of the present nations in Europe are raised to classical honours: thus the French are the *Gauls*, the Allemands are *the Germans*, England is always, "comme de juste"(!) *perfidious Albion*, Spain is *Iberia*, and Sicily recovers its old name of *Trinacria*.

9. *Vitalism.*

On the occasion of a recent account of a fatal case in the St. Louis hospital, where the reporter alludes to the "insignificance decourageante des alterations anatomiques" found on dissection, M. *Cayol* makes the following observations: "*Discouraging!*—We should register this word, this naive expression of the state of science, this cry of distress from anatomism, a cry which at length is heard to issue from all the benches of the school. We have recently seen two physicians of eminence, at the head of two great hospitals, become *discouraged* in presence of an epidemic, (that of *cerebro-spinalis* alluded to in a former number) the character and curative indications of which were alike mysterious to them; and now a distinguished pupil of the same school experiences a similar *discouragment* in the presence of a corpse, because he does not find on dissection what he fully expected with all the ardour and good faith of his age. The case consequently appears to him incomplete: for he has been taught to believe that the existence of the disease necessarily indicates such and such anatomical lesions to be present. Now we ask, would not this gentleman have formed a much more rational idea on the case in question, and been much more satisfied with the appearances found on dissection, if he had been instructed that the *disease is a vital act*, that it ceases with life, and that the necroscopic alterations—the importance of which we are far from denying where they really exist—are only the effects and results (not however the necessary ones) of this vital act, this abnormal function, which constitutes the disease! We cannot too often repeat this philosophic formula of vitalism, which is, in our opinion the very key of pathology."

10. *Hernia, Operation in.*

M. *Sedillot*, in commenting on a fatal case of hernia in his lectures, recalled to his hearers' attention the important saying of Sir A. *Cooper*—le grand chirurgien dont la pratique etait immense et le jugement si droit—"that if he were himself the subject of a strangulated hernia, he should not wish twelve hours to pass over without an operation"

Paré, *Le Blanc*, and many other celebrated surgeons have given a similar advice.

11. *Diagnosis of Scabies.*

M. *Sedillot*, after describing the mode of detecting the acarus and its appearances, says; "It is not however the presence of this insect that is to be considered as the distinctive sign of the disease; for it is often absent together; and even when not, it is by no means easily found by the inexperienced; but *it is the groove annexed to and leading from the papulæ*—a phenomenon which is constant in a certain number, whatever be their state of dessication. As this appearance does not exist in prurigo, its presence enables us "de formuler un jugement precis."

12. *Purulent Infection.*

M. *Sedillot* adopts, in reference to the ætiology of this most dangerous cachexy, the opinion that was first propounded by M. *Velpeau*, viz. that it depends upon the direct admixture of purulent matter with the blood, and the consequent contamination of the vital fluid.* There is not *necessarily* any phlebitis present, as alleged by *Blandin*; although certainly this lesion is of frequent occurrence. The theory of M. *Tessier* is utterly inadmissible: "Is it possible," asks the professor of Strasbourg, "to separate two facts so well linked together, as a pre-existent suppuration, and a consecutive purulent infection?"

13. *M. Roux's Hospital Practice: Lithotomy and Lithotrity.*

During the five years from 1836 to 1841, 24 patients have been operated upon for urinary calculus in the Hôtel Dieu; in six cases by lithotrity and in 18 by lithotomy. In all the first set, the patients recovered; but of the 18 who were cut, seven died.

In 1841, seven calculous patients were admitted under the care of M. *Roux:* in one case that of a young girl 11 years of age, death took place on the very day of her admission, in consequence of a profuse diarrhœa, which had utterly wasted her strength. Of the other six patients, four were treated by lithotomy and two by lithotrity: of the entire number only one—one of the four—recovered. In one unfortunate case of lithotrity, the *brise-pierre* instrument had formed a false passage about the neck of the bladder. (Frightful mortality on the whole.)

14. *Acupuncture in Neuralgia.*

M. *Lallemand* of Montpelier has for many years been in the habit of using acupuncture in cases of *genuine* neuralgia with very decided benefit: against rheumatic pains, he says, it is quite inefficacious. We must therefore be careful in discriminating the cases for its employment; otherwise we shall certainly be disappointed. If the pain be limited to the *trajet* of the nerves, we may with tolerable confidence promise relief, if not a complete cure, of the suffering. M. *Lallemand* relates many cases; one we shall briefly notice. A man had for six months been afflicted with most severe pain along the whole course of the sciatic nerve; five needles were inserted along its tract, and left in for three hours, The application was repeated at intervals of one or two days, four successive times; and the man was then completely cured.

Importance of Veterinary Medicine.

At the recent annual meeting at Strasbourg of the Scientific Association of France, M. *Falk* read a very sensible paper with the view of showing the importance of medical men making themselves acquainted with veterinary medicine. The utter neglect of this study is certainly to be regretted, as some valuable hints for the treatment of diseases in the human subjects might be derived from what may be called comparative pathology. Every one in the present day recognises the importance of a knowledge of the anatomy of the lower animals;—why not then of their diseases?

The suggestion of M. *Falk* was well received by the Association.

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* There is a difficulty which this theory does not solve: how is it that we daily see cases of purulent deposits being quickly absorbed without inconvenience to the system, or a single symptom of constitutional *infection?* Query. Has an electrical or galvanic agency any thing to do in such a case?

Bibliographical Notices.

[*Continued from page* 484.]

On the Chemical Discrimination of Vesical Calculi. By *E. A. Scharling*, A.A. L.L.M. Professor of Chemistry in the University of Copenhagen. Translated from the Latin, &c. By *S. Elliott Hoskins*, M.D. With Plates. London. J. Churchill. 1842.

The very numerous works which have issued from the press within the last few years on the very important subject of calculous disorders, would appear to preclude the necessity of an additional one within so short a period. There are certain peculiarities in Dr. Scharling's work, however, sufficient to recommend it to the perusal of those who wish to engage in chemical researches on the properties of calculi; his mode of classifying calculi is novel, and such as, in our opinion, contributes not a little to render their examination easy; and this too is we believe the only work in which rules for separating the usual mixtures of calculi from each other, are clearly laid down, rules moreover which come recommended to us as being deduced from actual analyses.

We shall now proceed to present to our readers a very succinct analysis of the leading parts of the work, commencing with the

Discrimination of Calculi.

Physical Characters of Calculi.

Form.—The most common forms of vesical calculi are the spherical, oblong and the amygdaloid, but somewhat compressed laterally, so as to give them the shape of pebbles. They are sometimes ovoid.

Many specimens are irregularly-shaped in consequence of the increment taking place more at one side or at one extremity, than at the other.

Size.—Urinary deposits are generally designated as sand or gravel, until they exceed two or three lines in diameter. Those worthy of the name of calculi vary in size from that of a pin's head to that of a turkey's egg, and beyond; some weigh a few grains, others several pounds.

Specific Gravity.—That is stated to vary from 1·213 to 1·976.

Surface.—The surfaces of calculi are frequently so characteristic of their composition, that mere inspection will often suffice to enable us to recognize the constitution of at least the external layer. Witness the rugged surface of the mulberry calculus. Uric-acid calculi are either smooth and even as to surface, or finely tuberculated, the tubercles not bearing any resemblance to the asperities of the mulberry calculus.

Colour.—Among the external features of calculi none are more distinctive than colour.

1st. A tawny-yellow, or fawn colour running through various shades into reddish-brown, indicates the uric acid series. 2d. The oxolate of lime formation is denoted by its dull purple colour inclining to brownish-black. 3d. The phosphates and carbonates are either purely white, or partake of a pale yellow or buff-tint. These observations relate solely to the colour of the external surface.

Odour.—Fourcroy it was who compared the odour of calculi, when sawn or rasped, to that of bone or ivory, and that the spermaceti odour given out by mulberry calculi, when abraded, was characteristic of that variety.

CLASSIFICATION OF CALCULI.

Various methods of Classifying urinary calculi have been proposed; some founded on their sensible properties, and others on their chemical composition. Our author conceives the most natural classification to be that in which not only the whole of the constituents are enumerated, but also the order of their succession. In order to facilitate their identification it is also necessary to class them according to their chemical properties. In his classification he has adopted both these plans.

Table of Vesical Calculi.

	Nucleus.	*Principal Mass.*	*Cortex.*	
1	Uric acid	Uric acid	Uric acid	32
2	" "	Uric acid and urate of ammon. alternat. . .	Urate of ammonia . .	1
3	" "	Uric acid	Phosphate of magnesia	13
4	Urate of ammonia . .	Urate of ammonia . .	. . . . .	3
5	Urate of soda	Uric acid	. . . . .	1
6	Urate of lime	Urate and oxalate of lime and urate of ammonia	. . . . .	1
7	Oxalate of lime .	Uric acid	. . . . .	3
8	" "	Uric acid and phosphates mixed	. . . . .	1
9	Triple phosphate . . .	Triple phosphate . . .	. . . . .	8
10	Fusible matter	Fusible matter	. . . . .	6
11	Urate and oxalate of lime	Oxalate of lime . . .	. . . . .	8
12	" "	" "	Phosphates	13
13	" "	Oxalate and urate of lime alternating	Phosphates	3
14	Urates of ammonia & lime	Urates of ammonia and lime alternating . .	. . . . .	2
15	Uric acid and urate of ammonia	Urate of ammonia and phosphates mixed . .	. . . . .	2
16	Uric acid & urate of lime	Oxalate of lime . . .	Phosphates	2
17	" "	Phosphate	. . . . .	2
18	Uric acid, urate and oxalate of lime	Urice acid	. . . . .	27
19	Uric acid, urate of ammonia and oxal. lime .	Phosphates	. . . . .	2
20	Uric acid, urate and oxalate of lime	Urice acid	Phosphates	17
21	Silica	Silica	. . . . .	1
22	"	Carbonate of lime . .	. . . . .	1
23	Foreign materials . . .	Phosphate of lime . .	. . . . .	2
24	No nucleus	Phosphate and carbonate of lime	. . . . .	1
25	" "	Phosphates	. . . . .	2
26	" "	Fibrinous matter and phosphates	. . . . .	1
			Sum total of calculi . .	155

Thus, in 94 the principal mass is uric acid = 60 per cent. = 1 : 1½
23 " " oxalate of lime = 15 " = 1 : 6⅔
25 " " phosphates = 16 " = 1 : 6¼

In the above table the ingredients forming the nucleus have been arranged in the first column; in the second, those constituting the body or principal mass; and ifi the third, the material of which the cortex, crust, or external covering, is composed. When the latter coincides in composition with that of the principal mass, a blank space has been left.

The classification proposed by our author is founded on the changes which are produced on calculous concretions by exposing them to a high temperature.

The effect first produced on a fragment exposed to the blow-pipe flame is, that it becomes charred, owing to the combustion of the animal matter calculi always contain.

If the heat be continued, or augmented, one of the following conditions is fulfilled,—

1st. The fragment gradually consumes, leaving no residuum, or a very slight one.

2d. The fragment does not consume; it either whitens after being charred, and remains unchanged, or it fuses into a head.

3d. The fragment partially consumes, leaving a considerable proportion of residuum.

These three differences naturally suggest the division of calculi into three classes.

Class 1st.—*Combustible Calculi*, which consume on being sufficiently heated, leaving a very minute residuum.

Class 2d.—*Non-Combustible Calculi*, which do *not* dissipate under calcination.

Class 3d.—*Partially Combustible Calculi*, which, after combustion leave a considerable proportion of residuum.

The first class includes the following orders:—

A. *Uric acid.*

B. *Uric oxide.*

C. *Cystine.*

D. *Combinations of the three preceding, with each other, or with other combustible materials, as ammonia,* &c.

The second class includes the following orders:—

A. *Phosphates.*

B. *Carbonates.*

C. *Silica.*

D. *Mixtures of the preceding.*

The third class includes the following orders, namely:—Compound Calculi, formed by the combination of the species contained in the two former classes.

A. *The residuum consisting of the phosphates.*

B. The residuum, consisting of carbonates or caustic bases.

C. The residuum, consisting of phosphates, with carbonate or caustic bases.

D. The residuum, consisting of accidental ingredients, either alone, or mixed with the foregoing.

On the Origin and Increment of Calculi.

The mechanical formation of calculi evidently depends on the gradual deposition of minute particles, either amorphous or crystalline, on some solid molecule existing in the bladder. This mass may be a small calculus which has descended from the kidneys, or some foreign substance accidentally present in the bladder.

When instruments are allowed to remain for any time in the bladder, they become coated with a deposit from the urine, which deposit generally consists of

the phosphates. Other substances resident in the bladder, also acquire this sort of incrustation. As similar phenomena occur when a solid substance is placed in concentrated saline solutions, we may infer that urinary concretions are formed by a similar process of deposition. Prout, and others, however, entertain a somewhat different opinion: they consider, that precipitation does not occur until the foreign substance has produced so much irritation as to affect the kidney sympathetically, so as to cause secretion of urine supersaturable with precipitable salts.

Berzelius considers that urinary concretions form under the following circumstances: first, owing to the kidneys secreting an over-abundance of the salts sparingly soluble in urine. Secondly, the absence of a sufficient quantity of free acid to retain the ordinary proportion of phosphatic salts in solution. Lastly, a morbid tendency in the kidney to secrete matter not naturally contained in the urine, such as oxalate of lime, which being insoluble, precipitates as soon as formed. Any of these conditions occurring, deposits, he says, take place, which are either carried out of the system, in the form of gravel, or become consolidated and remain for a time in the pelvis of the kidney, from whence, in all probability, they ultimately make their way into the bladder.

When renal calculi have descended into the bladder, unless speedily expelled, they act as foreign bodies, affording a foundation for subsequent deposition. The degree of rapidity with which precipitation takes place, depends on various causes. Among these may be enumerated the envelopment of the nucleus, in albumen, blood, mucus, pus, or any other organic matter that chances to be present in sufficient quantity. These form a villous coat around the solid material, and their flocculi arrest, entangle, and ultimately determine the crystallisation of the more insoluble ingredients of the urine. This explanation will go far to account for the animal matter contained in all calculi, the presence of which adds so much to the difficulty of distinguishing their constituents.

These organic substances may be considered as a kind of cement which binds calculous constituents together; and not only favours their increase, but in very many instances lays the foundation for precipitation.

Solvents for the Stone.—Various solvents have been at different times recommended for the solution of gravel and calculus. And first, with respect to uric acid, the most frequent of any of these concretions. Uric acid requires ten thousand parts of water for its solution; whilst its combinations with the fixed or volatile bases are readily soluble in 480 parts of water. Hence the carbonates of soda and potash are available as solvents for this species of concretion. The solvent powers of these salts are not confined to urates alone. They act equally well on oxalate of lime and phosphatic calculi.

On digesting oxalate of lime in a solution of the alkaline carbonates, an interchange of principles takes place, carbonate of lime, and oxalates of soda or potash result. The two latter salts are soluble in water alone, and the former in water impregnated with carbonic acid. The phosphates are decomposed by the alkaline carbonates, especially the neutral phosphate of lime; more especially by using the bicarbonates. To this circumstance may be attributed the beneficial effects produced by certain mineral waters. Lime-water and carbonate of lime are sometimes useful. These constitute the chief ingredient in Stephens' remedy. In cases where alkalies have failed to relieve, or where they disagree with the digestive organs, carbonate of magnesia has often been employed with advantage—the calcined earth has also been given.

The direct administration of the alkaline carbonates, is not the only, and not always the best, way of employing them. For the neutral salts formed by vegetable acids become converted by a vital process into carbonates during their passage through the sytem. Caustic potash, as being a more powerful solvent

of uric acid than the carbonate, is frequently beneficial. Borax also has been found capable of dissolving uric acid, even in larger quantity than the carbonates of either potash or soda.

Boettiger has experimented on this subject, and finds that four grains of biborate of soda, dissolved in an ounce of water at 98° F. speedily and entirely dissolves a large proportion of uric acid. Our author has found this to accord with his own experience. He employed a solution composed of twenty-four grains of borax to six ounces of water, and found that it dissolved nine grains of uric acid, a part of which was re-deposited at the end of a few hours. He then tried the acetate of soda, and found it less efficient as a solvent than the biborate. Boettiger considers that borax would act more efficiently if used as an injection; our author entertains the same opinion with respect to the acetate of soda, if used as a solvent for phosphatic calculi. The effects of acetate of potash are precisely similar to those of soda.

For the solution of earthy calculi various vegetable acids have been employed, especially the lactic, malic, and citric, on account of the solubility of the salts they form with lime. Tartaric acid also has been used, but with little prospect of success, from the well-known insolubility of tartrate of lime. As factitious waters, such as soda-water, are likely to owe their effects rather to the alkali than to the carbonic acid they contain, the soda-water, as usually prepared, by merely condensing carbonic acid in water, is less likely to be available than an effervescing draught made with bicarbonate of soda and a vegetable acid.

Various arguments have been advanced for and against the utility of the alkaline treatment in calculous disorders. Some warmly recommend it, whilst others aver, that alkalies, far from being beneficial, are decidedly injurious, tending, rather, to increase than diminish any existing concretion.

Our author, however, is satisfied, from his own experience, of the efficacy of solvents in calculous affections; he has distinctly seen the surfaces of calculi eroded and in a cellular state from the effects of chemical agents.

Dr. Scharling mentions, that it has been frequently proposed, instead of taking chemical solvents into the stomach, to inject them into the bladder, so as to place them in immediate contact with the stone. The difficulty is to discover a solvent which, whilst it acts energetically on the stone, should exercise no injurious effect on the animal tissues. He does not seem to be aware of Sir B. Brodie's successful employment of very dilute nitric acid as a lithontriptic injection, a practice which other English surgeons have adopted in various cases.

We shall here close our notice of this little work, not without recommending it to the medical practitioner as a useful guide in the chemical discrimination and recognition of vesical calculi.

THE BENGAL DISPENSATORY, AND COMPANION TO THE PHARMACOPŒIA. BY *W. B. O'Shaughnessy*, M.D. Assistant-Surgeon, Bengal Army.

THE publication of this work is an era in the medical literature of the East; and its influence will even be felt in Europe.

The Editor had a new field open to him, and has displayed much diligent research in the cultivation of it. He apparently complains—that an order of the Indian Government compelled him to publish this edition before his investigations were complete. We can sympathise with him in his feelings on being arrested in the course of inquiry which he was pursuing. We would, if it were necessary, acknowledge the claim to lenient criticism; but we prefer viewing this edition as a first instalment of what is to come, and we cannot very strongly condemn the im-

patience of a government anxious to diffuse the benefits of the publication; and to engage in the inquiry the attention and observation of their many other medical officers. We know the uncertainty of human efforts too well to lament the appearance of this work—prematurely for the Editor's wishes—but not so, we think, for a fair amount of benefit and credit.

The investigations which he and others have been making, have not been unknown to us,—we have transcribed the facts as they have appeared from time to time in the Indian Journals.

The efficacy of narcotine as a substitute for quinine is familiar; but the scarcity of the remedy, and the great expense of preparing it in this country, make it inapplicable.

The alcoholic extract of Gungah (Cannabis Indica), has been made extensively known through the medium of this Journal, and has excited much attention. It has been successfully employed, and its use is rapidly increasing. It is spoken of as an anodyne and sedative superior to opium, possessing those qualities equally, yet being devoid of the unpleasant after-effects. It has been successfully given for the relief of cough in phthisis,—of rheumatic pain,—of the delirium in low typhus fever,—to promote sleep in persons who have ceased to derive advantage from opium,—for the relief of whooping-cough,—chorea, and many other spasmodic diseases in this country. The success which has followed its use in all these cases, has given surprise, and the confidence in the drug is increasing.

The necessity of having a special Pharmacopœia and Dispensatory for India, is well set forth. First, "The British Pharmacopœia containing a great number of indigenous plants, which do not grow in India, or the limitrophe countries, but for which Indian substitutes may be found." This argument applies to others, as well as to the limits of this country.

The Poppy Oil is introduced as a substitute for that of the Olive, which is an article of importation from England. The sweet oil of the Sesamum Orientale, which is universally cultivated in the East, and the very mildly agreeably tasted oil of the Arachis Hypogœa (Earth Pistachio), which has lately been introduced and is now much cultivated about Calcutta, are also recommended both for culinary purposes and pharmaceutical use, instead of the abundant products of the coasts of the Mediterranean—the staple of Italy, Spain, and the South of France.

Conium Maculatum is retained in this work; yet its application, after a voyage to India, and the length of time it must necessarily be kept in the apothecary's hands, previous to its use, must leave great doubt of its efficacy. Indeed, the diseases in which it is usually employed in temperate climates are not of frequent occurrence in the East. The Editor manifestly contemplates the introduction of the Conia, or the alcoholic extract proposed by Dr. Christison, as its most convenient form.

Secondly,—"The British Pharmacopœia do not contain numerous plants indigenous in India, of proved utility as remedial agents.

Thalictrum foliosum, Wall. Offi. Root.

It has been used in the Hospital of the Medical College in several cases of ague, and as a tonic in the convalescence from acute diseases.

Gr. v. of the powder, or gr. ij. of the watery extract given thrice daily, have in some cases prevented, and in several moderated, the accession of fever, and at the same time acted gently on the bowels. The only sensations experienced were warmth at the epigastrium, and a general comfortable feeling. The bruised root having been given to large dogs, in doses of from gr. x, to 3 ij., no particular effects were observed.

It deserves extensive trial, and promises to succeed well as a febrifuge of some power, and a tonic aperient of considerable value.

Coptis Tecta, Wall. Offi. The Root.

The Coptis Tecta has found its way through the drug-shops of Bengal, and is even occasionally exposed for sale in the upper provinces; it brings a high price, and is deemed a tonic remedy of the greatest value. It was used extensively in the General Hospital by the late Mr. Twining, who reported that its influence in restoring appetite, and increasing the digestive powers, was very remarkable, and that it might be said to possess all the properties of our best bitter tonics.

Further trials in the College Hospital were equally satisfactory. It did not seem to exercise any febrifuge virtue, but under its influence several patients recovering from acute diseases, manifestly, and very rapidly, improved in strength. The dose was from gr. v, to gr. x, of the powder, or ℥j, of the infusion thrice daily.

Cocúlus cordifolius. (*Vern. Guluncha.*) Offi. The Root and Stems.

This is one of the most common and valuable plants in India. The fresh root is used extensively by the natives of Bengal, being mixed with sour rice gruel and sugar, for the cure of heat of urine in gonorrhœa. The stem, roots, and leaves are bitter, and are much used, in the form of decoction, as a tonic in convalescence from fevers and acute diseases generally.

In several trials, made at the College Hospital, the Guluncha was found to be a very useful tonic, but we could scarcely attribute to it any very decided febrifuge effect. The decoction was of great use in the treatment of several cases of chronic rheumatism, and of secondary venereal affections. Its action is decidedly diuretic and tonic in a very high degree.

Berberis Lycium. Offi. Root and Bark.

A watery extract, called Rusot, is prepared in the hilly districts of India. Dr. Royle has very ably traced the history of this substance, and identified it perfectly with the celebrated ῥεχαν 'αῤχαν of Dioscorides.

The trials instituted on the medicinal virtues of rusot, have led us to some satisfactory results.

Rusot is best given as a febrifuge in half-drachm doses, diffused through water, and repeated thrice or still more frequently daily. It occasions a feeling of agreeable warmth at the epigastrium, increases appetite, promotes digestion, and acts as a very gentle but certain aperient. The skin is invariably moist during its operation.

In more than thirty cases of tertian ague, (several complicated with spleen,) we have succeeded in checking the fever, on an average, within three days after commencing the rusot.

In eight cases of quartan ague, six were cured.

The cases of common quotidian, successfully treated in this manner, were so numerous that they were not recorded. In no instance was headache or constipation produced, but we have seen rusot exasperate the symptoms of chronic dysentery, or hepatitis, when complicated with ague.

On the whole, we deem rusot a most important accession to our Materia Medica, and worthy of being substituted in a multitude of cases for cinchona bark. Its aperient action renders it especially valuable.

Dipterocarpus lævis. Hamilt.

The close resemblance in physical and chemical properties which this bears to copaiba balsam, led to the institution of an extensive set of experiments by the Editor on the medicinal effects of the former in the treatment of gonorrhœa. The results which have been laid before the profession, and which have been confirmed by trials made by other practitioners, lead to the conclusion that, in the treatment of gonorrhœa, gleet, and similar affections of the urinary or-

gans, the essential oil of grugun is nearly equal in efficacy to the South American drug.

The essential oil may be given in 10 to 20 drop doses, and repeated thrice, or still more frequently, daily. It generally causes a sensation of warmth at the epigastrium, eructation, and sometimes slight purging. It communicates a strong smell of turpentine to the urine, which it increases remarkably in quantity. Some obstinate cases of chronic gonorrhœa and gleet, which had long resisted copaiba and cubebs, have been cured by this remedy in the course of the experiments alluded to.

Azadirachta Indica. Juss.

Every part of this tree, especially the bark, is bitter; the bark is also astringent, the leaves are bitter, and very nauseous; from the ripe pericarp of the fruit a very bitter fixed oil is expressed; the trunk of the tree yields gum, and the young trees, when tapped, yield a saccharine sap or toddy, capable of undergoing the vinous fermentation.

The oil is thought to be anthelmintic, and is applied externally to foul ulcers, and used as a liniment in rheumatic and spasmodic affections, and in headaches from exposure to the sun. The wine or toddy is supposed to be stomachic, the dose being an ounce and a-half every morning. Dr. White, of Bombay, used the bark of this tree as a substitute for cinchona, and with nearly equal success as a febrifuge remedy. Mr. Skipton has related a case of hysteria in which a decoction of the leaves was used with the best effect.

Calotropis Gigantea. Mudar.

The powdered bark of the root, in doses of from half a drachm to one drachm, proves emetic after an interval of from twenty minutes to an hour, generally causing much nausea, and in about one case in every three inducing a cathartic operation. In doses of from two to five grains taken every half-hour, it proves nauseant, powerfully diaphoretic, and after several doses gently cathartic.

Pharbitis Cærulea. Wall.

The powdered seeds in doses of thirty to forty grains act as a quick, safe, and pleasant cathartic. We have made this seed the subject of numerous experiments. In 100 cases in which it was given under our direction in the Police Hospital of Calcutta, it proved purgative in 94, occasioned vomiting in five, and griping but in fifteen, and produced, on an average, five stools within $2\frac{1}{2}$ hours; the operation generally commenced in an hour, and in these experiments was never delayed beyond four hours.

The alcoholic extract, which consists of resin and oil, is of excellent pilular consistence, and keeps for several months. In ten-grain doses it produces all the effects of jalap, with certainty and speed; the taste is scarcely perceptible. We have thus a remedy of unparalleled cheapness, perfectly equal to jalap as a cathartic, superior to it in portability and flavour, and occurring in all parts of India.

3dly. "The pharmaceutical processes in the British Pharmacopœia, especially with reference to distillation, evaporation, making of tinctures and alcoholic extracts, and many other articles, such as ethers, are modified so as to meet the price of labour and spirit, and the operation of excise laws; restrictions are not felt in India, where alcohol of the pharmaceutical strength (sp. gr. 835) may be had for 2s. 8d. the gallon of four imperial quarts—a circumstance which affords immense facility to a multitude of processes. The cheapness of spirits may moreover enable the editors of the Pharmacopœia to effect decided practical improvement in the preparation of vegetable proximate principles, such as quinine and morphine—as well as in the extracts, tinctures, &c. It will enable them also to give efficient directions, and point out various plans for prosecuting ana-

lytical researches after new vegetable remedies. Much will be done towards reducing the prices of a great number of medicines essential to clinical practice.

4thly. In the chemical preparations, especially those of the alkaline and metallic salts, perfectly new directions would be essentially necessary in many instances.

Sulphate of magnesia being an abundant natural product in England, the calcined and carbonate of the same base are manufactured from that article. In India however our native druggists should receive instruction how to produce magnesia from the residue after the preparation of common salt, from the magnesian limestone of Sylhet and the Himalaya, and from the magnesite of Madras.

Potash is obtained in Canada by the burning of the forest timber; in Ireland from the fern; in France, Italy, and along the Rhenish wine-districts from cream of tartar; in India with most economy from nitre;—in each case a totally different process is required for its extraction, purification, and adaptation to medicinal use.

Soda is obtained by the Spaniard most easily from barilla by mere washing; by the Scot from kelp, by a much more laborious and unproductive process; in France, and latterly in England, it is prepared from common salt, which is first decomposed by sulphuric acid, and then the resulting sulphate of soda subjected to another process, which changes it into the carbonate. In Bengal and Mysore the soil in many places is so impregnated with the alkali, that incineration and washing extract from 35 to 50 per cent. of fine soda. Ammonia and its compounds would also require considerable alteration. Processes would be necessary for the reduction of several mercurial compounds from the Chinese cinnabar, and the crude chloride of the bazaars.

With reference to the antimonial preparations, methods should be pointed out of distinguishing between the sulphurets of lead and antimony, two substances common and cheap in the bazaars, and resembling each other so strongly that they are constantly confounded even by the drug dealers themselves.

5thly. An urgent necessity exists for alteration of the nomenclature of the British Pharmacopœia, to meet the circumstances, and degree of education of the natives of India. In a territory where not one native understands the Latin language, it would be monstrous pedantry to retain exclusively the Latin names of the present Pharmacopœia. Of the vegetable articles of the Materia Medica nine-tenths are of Eastern origin, and have familiar names in the Bengali, Hindoostani, or English tongues. With the natives of the country there is no need of any intimate acquaintance with the scientific names. The object is to meet the wants of an immense, an ignorant, and poor population, among whom medical science is but beginning to establish itself; among whom, were we to distribute a full proportion of well-educated practitioners, their acquirements must be almost useless, owing to the high prices of all medicinal preparations sold by the private European establishments in Calcutta, Cawnpore, and Meerut—the only localities of Bengal and Upper India where European apothecaries have settled. Little competition existing, the prices of the most indispensable articles of medicine are fixed at such a rate that rich natives will not, the poor cannot, avail themselves of the remedies which medical science has pointed out.

The intention is to promote the supply of competent practitioners and druggists—to furnish them with instruction by which they may successfully perform all the operations and processes which pharmacy requires—to present them with a list of remedies, the natural history of which has been investigated, and the medical virtue determined by adequate authority or clinical observation;—to specify the precautions under which a medicine, having dangerous as well as remedial properties, should be administered—to warn against the use of dangerous remedies in good popular repute—and to give a few simple directions to guide the purchaser or collector by the natural characters of the drug, and its usual price in the market. It is to be a hand-book to the inexperienced prac-

titioner, where all are inexperienced—the "Apothecary made easy," and adapted to the most limited comprehension for the benefit of our black brethren of Upper India and Bengal.

In future editions we shall expect to see the editor exercise a bolder judgment. This is a careful and judicious compilation from our own Pharmacopœia, with additions from sources peculiar to India. The author has not forgotten his British education, and he has not therefore conformed as much as he will hereafter do, to the peculiarities of the Indians. He has also felt that he wrote for British critics, and this feeling, while it has made him correct, has restrained him from making the most of the clear field which lay before him. No doubt correctness is of the highest value in scientific writings; but it ceases to be a virtue when the correctness of compilation checks the expression of correct observation. The quick energy of thought and perception which Dr. O'Shaughnessy has shown, in what he has hitherto done, calls for our utmost praise. The eye that detected the false Angustura bark, in that about to be administered to the patients in the hospital, and identified it with the bark of strychnos nux vomica;—that detected the very valuable antispasmodic effects of gunjah, which had been passed over unnoticed by other Europeans for a century;—and that adopted as a medicinal agent, the popular, but hitherto unnoticed purgative, pharbitis, needs little check from the many eyes that look for years, yet see not.

CONCISE HISTORICAL SKETCH OF THE PROGRESS OF PHARMACY IN GREAT BRITAIN. By *Jacob Bell.*

PHARMACY was originally in the hands of the physicians, who prepared their medicines themselves, or superintended the preparation of them. The science of medicine was then but little understood, and was often confounded with witchcraft; in fact, the Greek word Φάρμακον signifies either to practise witchcraft or to use medicines.

The first act of parliament relating to the medical profession was passed in the year 1511; by this the faculty of medicine was vested in one body of practitioners who exercised medicine, surgery, and pharmacy. The physician's assistants were styled apothecaries, and these soon began to transact business on their own account.

In the year 1518, the College of Physicians was established. In 1540, their powers were increased, and they had the right of entering the houses of the apothecaries in London, examining the drugs, and destroying such as they deemed unfit for use. In the same year the barbers and surgeons were united into one company, but the surgeons were prohibited from shaving, and the barbers were restricted from performing surgical operations.

In 1695, the question was tried as to whether surgeons were entitled to administer medicines internally, when it was decided "that no surgeon, as a surgeon, might practise physic for any disease."

It is uncertain at what time the physicians gave up the practice of preparing their own medicines, but it appears that in 1617 the apothecaries obtained a charter constituting them a company by themselves wholly to be employed in the business of pharmacy. It was enacted at the same time that no grocer should keep an apothecary's shop, and that no surgeon should sell medicines.

The first Pharmacopœia was published by the College of Physicians in the year 1618. This was the first step towards the improvements which have since obtained in pharmacy. This was however a very imperfect production, the compounds chiefly employed being either empirical nostrums, or mixtures of great numbers of substances, without any reference to scientific principles. Thus

the Mithris was a compound of seventy-two ingredients, and many others were equally as absurd.

Culpeper, in his translation of the Pharmacopœia, gives a list of the remedies derived from the animal kingdom, contained in the Pharmacopœia. The following will serve as a specimen, with Culpeper's remarks in parentheses.

"The fat, grease, or suet of a duck, goose, eel, bore, heron, thymallos, (*if you know where to get it,*) dog, capon, beaver, wild-cat, stork, hedge-hog, hen, man, lyon, hare, kite, or jack, (*if they have any fat I am persuaded 'tis worth twelvepence the grain,*) wolf, mouse of the mountain, (*if you can catch one,*) . . . . . album græcum, east and west bezoar, stone taken out of a man's bladder, viper's flesh, the brain of hares and sparrows, the rennet of a lamb, kid, hare, and a calf and horse too. (*They should have put the rennet of an ass to make medicine for their addle brains.*) The excrement of a goose, of a dog, of a goat, of pigeons, of a stone horse, of swallows, of men, of women, of mice," &c. &c.

But though Culpeper justly ridicules the College of Physicians for inserting such wretched trash, some of his own remedies are by no means first-rate; thus he says—"The head of a cole-black cat being burnt to ashes in a new pot, and some of the ashes blown into the eye every day, helps such as have a skin growing over their sight."

About this time chemists begin to be mentioned, as a class of men who prepared, for the use of the apothecaries, the "chemical medicines," or those of mineral origin, and which were subjected to fire.

In the year 1671, however, the Society of Apothecaries, which had continued to prosper, established a chemical laboratory, in addition to the dispensary; thus uniting in one establishment the preparation of chemicals and galenicals. This institution was at first on a small scale, but the superior quality of the articles supplied soon led to an application on the part of others to participate the benefit. In a few years, consequently, from this time, the Company became a trading body, and supplied all customers.

In 1694, apothecaries were exempted from serving the office of constables, scavengers, &c.: by this time they had increased so rapidly in numbers, as to have become a very influential body. By practising medicine as well as pharmacy they excited the jealousy of the physicians, between whom and the apothecaries a violent contest now rose; pamphlets were published on both sides, and the dispute ran high, till at last the physicians resolved to put down the apothecaries by establishing dispensaries, where they supplied medicines on reasonable terms, made up under their own superintendence.

The dispensaries prospered, but in process of time, the physicians becoming weary of the drudgery of the business, established the assistants whom they had employed and instructed at these places, as dispensing chemists on their own account; some of the apothecaries, finding the business profitable, adopted the same course, and from this we may date the origin of chemists and druggists.

In 1723, the College of Physicians were again empowered to visit the shops of apothecaries, and examine the drugs; this right however was not always exercised in a very impartial manner, nor indeed does it appear that the persons employed were always very competent.

Thus, an anecdote is related, that some of the examiners coming to an apothecary's shop, found a pot with *ung. album* written on it: the gentlemen got about the pot and examined it; each gave his opinion—one said it was hard, another that it did not smell enough of camphor, a third that it ought to be malaxed with some oil, while a fourth proposed treating it in a summary manner by throwing it out of doors. In the height of the dispute, the boy coming in, entreated them to stay their hands, assuring them that it was perfectly good, but only put into the wrong vessel. "What is it, then?" said one of the learned. "Why, gentlemen," said the boy, "'tis white dog's ——."

In the Pharmacopœia of 1746, a great improvement had taken place over that which preceded it, many of the complicated and absurd formulæ were removed, and considerable progress had been made in the chemical part. The Mithridatum with its forty ingredients, and Theriaca Andromachi with about sixty, were still however allowed to remain.

The origin of the Botanic Garden at Chelsea is involved in some obscurity, but it is supposed to have been founded prior to the year 1673. In 1722, Sir Hans Sloane, who had purchased the manor, granted it on lease to the Society of Apothecaries, on condition that they should present annually to the Royal Society fifty distinct plants, till the collection amounted to 2000, and also that the garden should be appropriated to the purpose of cultivating plants, instructing students, and advancing science.

Towards the latter end of the last century, disputes having arisen between the chemists and apothecaries, the latter formed themselves into a Society under the title of General Pharmaceutical Association of Great Britain, for the purpose of preventing chemists from vending pharmaceutical preparations, compounding physician's prescriptions, &c. The result of their exertions, however, was not so successful as was anticipated, and the Society shortly broke up without having effected much against the druggists, whom they had threatened to destroy.

For the remainder of the account or the differences between the apothecaries and chemists and druggists, we must refer to the pamphlet itself, in which our readers will find much to instruct and amuse them.

REMARKS ON MEDICAL REFORM, IN A SECOND LETTER TO SIR JAMES GRAHAM, BART. &c. By Sir *James Clark*, Bart. pp. 40. March, 1843.

THE dice are rattling in the box, and the next throw will probably decide the fate of MEDICAL REFORM—at least, for many years to come! We confess that the hollow sound of the dead bones vibrates rather ominously on our ears—and we should be less surprised than grieved if the dice turn up sixes and sevens instead of aces. Instead of having a united Board or Body—a "tria (or duo) juncta in uno"—to regulate and equalize the education of the profession in England, we shall perhaps have the DISJECTA MEMBRA brought forward, a little whitewashed and varnished, but still essentially the same—each pulling its own way, and for its own corporate interest. The time for appeal is short—and we regret to see that the zeal, the energy, and the union of the profession are far from corresponding to the emergency of the occasion! Sir James Clark and others, including ourselves, have urged on the public, for some time past, the necessity of petitioning the legislature on this important subject—and if active measures are not now quickly taken, the cause will be lost.

We made our readers acquainted with our author's former Letter to Sir James Graham. The present brochure briefly recapitulates the prominent features of the appeal, and adds fresh arguments and illustrations.

"My principal object in addressing you at present is to urge the necessity of so framing the legislative enactment which you are about to introduce, as thereby to secure to all who are permitted to engage in the practice of medicine a GOOD EDUCATION. This is unquestionably the most important part of what is implied by medical reform, and that calling most loudly for the interference of the Legislature. Until it is obtained, any scheme of reforming or modifying the existing medical corporations will, in my belief, be productive of little benefit to the profession and less to the public."

Our author, as we ourselves have long done, urges the propriety of one uniform system of medical education for all classes, including the general practitioner, leaving those who choose to go beyond that *minimum* of acquirements to do so, if they please, and pursue any particular department of physic or surgery to which their genius or inclination prompts them. Such curriculum, he thinks, ought to be determined, not by any corporate body, but by a Board of Commissioners appointed by Government, and quite independent of the Colleges, or the teaching corps.

Sir James dilates eloquently and urgently on the necessity of a far superior preliminary education—literary and scientific—to that which now obtains—if, indeed, anything of the kind now obtains at all. This course of study, he thinks, and we agree with him, should be *completed* before the professional courses commences. Such preliminary education will, in fact, facilitate the course of medical studies that are to follow. The apprenticeship-system he, of course, completely throws overboard, as it has now very few advocates.

As the general practitioner is now the general physician and surgeon of the public, and consequently has an overwhelming responsibility thrown on his shoulders, his education and examinations should be precisely the same as those who intend to pursue physic or surgery exclusively afterwards. The latter, as we before observed, may extend their studies and acquirements to any further amount they please.

In the following sentiments we entirely agree.

"Of the advantages which would accrue both to the profession and the public from the establishment of a better system of education throughout the empire for all medical practitioners, there will, I apprehend, be little difference of opinion. But upon the actual amount of that education, more especially as regards the general, or what has been termed the preliminary education, there may be much;—such difference, however, arising not from any want of agreement respecting the utility, or even necessity of such preliminary instruction, but upon other grounds. The principal of these grounds are, I believe, the following:—1st. The difficulty of obtaining the requisite preliminary education; 2d, the want of means and time on the part of the student; 3d, the notion that if much general education is called for, there may be a deficiency in the number of young men entering the profession; and 4th, the suspicion that men so educated would not undertake the drudgery of attending the poor.

"The first objection might have had some weight a few years ago, but has little or none at present, when public educational institutions, at which all the necessary instruction is given, are so general, that no town of any consequence is without one.

"The second objection is inadmissible. The want of means on the part of the student is not a legitimate reason for not requiring the necessary education; but it does afford a conclusive reason why a youth so circumstanced, should not enter the profession at all. The chief cause of the evils of which I complain has arisen from youths entering the profession totally deficient in preliminary education, and without the means of enabling them to obtain more than a *minimum* of medical education. Want of time will form no objection when the apprenticeship system is abolished; and I believe it has now scarcely an advocate. 'An apprenticeship may unhesitatingly be pronounced pernicious, which absorbs either the means or the time that ought to be devoted to the acquisition of preliminary and scientific knowledge. And when we remember the circumstances under which a large proportion of medical apprenticeships are at present passed, at a distance from any school where either preparatory or professional knowledge can be acquired, and in the performance of a perpetual routine of menial services, which could be performed with equal advantage to the public by the most uneducated; such apprenticeships cannot but be considered as an arrangement in which

the interests of those who are training to the medical profession are sacrificed to the interests of those who are already engaged in its practice."*

"The third objection to good preliminary education I consider of little weight, By requiring a higher standard of education, the profession would be made more respectable, and young men of a better class, and better educated, would be found in abundance, I doubt not, willing to enter it; and should it have the effect of diminishing the number of medical students, neither the professionn or the public would, I apprehend, be losers by such a result. At present, the medical profession is over-crowded; and, if the enlightened views which are now being promulgated for improving the public health, more especially that of the working classes, are fully carried out, the present proportion of medical men, may, I believe, be considerably diminished with perfect safety to the public.

"With respect to the remaining objection—that well-educated young men would not submit to the drudgery of attending the poor—I believe it to be equally visionary with the others, and, at any rate, it will be time enough to legislate for such a case when it occurs."

In illustration of the great neglect of the medical student's preliminary education, our author quotes a remarkable passage from Mr. Guthrie's Lectures.

"I regret to say," observes that gentleman, "that among the students who entered the profession some years back, and are only *now* presenting themselves for examination under the regulations of 1836, their are many who cannot spell very common words in their native language."

This is a sad picture of the British Surgeonry! The next great point urged by Sir James, and advocated for twenty years by ourselves, is the disjunction of pharmacy from physic. There is no necessary connection, in *practice*, between the two. Their union is a remnant of the dark ages—before the division of labour was advanced—and when every workman made his own tools. Who would not stare to see Sir Astley Cooper or Sir Benjamin Brodie, working half their time with their leather aprons and tucked up sleeves, constructing their gorgets, catheters, scalpels, lancets, catlins, and the whole of the armamentum chirurgicum!!

It is so with the physician and surgeon—and, *a fortiori*, with the "GENERAL PRACTITIONER," who has so many other irons in the fire. For although it is necessary for all three denominations to *study* pharmacy—it is totally unnecessary to practise it—except at the expense of other and more important avocations and investigations. But this is not the worst of the union. Pharmacy is a scientific *trade*—physic a liberal *profession*. The two should never be combined. As long as they are linked together, the public will look at the traffic in pills, potions, and draughts, with an eye of suspicion and distrust. Moreover, the general practitioner will never get the free, and unschackled, and undisputed power to charge for his *skill*, while he throws in *physic* at the same time.

But all these things must be urged; and quickly urged, on the notice of the Legislature by numerous and respectably signed petitions from every part of the kingdom. The letter of an individual to the Home Secretary, however distinguished that individual may be, will not counterbalance the ear-wigging of those whose interests are likely to be affected by any thorough reform in the profession. In the mean time we recommend the immediate perusal of both the Letters in question, as furnishing data, forms, and substance for petitions to both Houses of Parliament.

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* Dr. Thompson; Life of Cullen, vol. i. p. 515.

On Diseases of the Bladder and Prostate Gland. With Plates. By *William Coulson*. Third Edition. 8vo. pp. 274. London: Longman and Co.

The appearance of a *third* edition of this work is good evidence of the estimation in which it is held, while the care with which each successive edition has been revised, is also evidence that the author deserves the patronage he has experienced. Our opinion has been already expressed so freely in his favour that it is unnecessary to reiterate it, suffice it that we recommend the book strongly to the profession.

Mr. Coulson has seen no reason to alter his views on the subject of urinary diseases, nor the arrangement of his observations upon them. But he appeals to what has been added to the chapter on Urine, as well as to those on Stone and on the affections of the Prostate Gland, as proofs of the attention with which he has reconsidered his book.

The chapter on the Urine is indeed very complete, and merits careful perusal. Its chemical composition in health, its alterations in disease, the modes of examining it, and the indications to be drawn from it are set forth both with perspicuity and completeness.

The chapters on Stone too, are copious and accurate. The following is Mr. Coulson's plan of operating for the removal of the stone.

"I introduce a curved staff, and give it to the care of an assistant, directing the handle to be inclined a little towards the ground, and the groove to be turned towards the left side. By this inclination of the handle, the groove of the staff is certainly made less prominent in the perineum; but there is this advantage attending it, that when we have cut into the groove, there is no occasion to alter the position of the staff, and the fore-finger of the left hand is quite at our disposal for protecting the rectum, and guiding the knife. I find that I can perform the operation much more rapidly in this way, than by taking the staff into my own hand. M. Langenbeck is a strong advocate for this mode of holding the staff; he, however, advises the handle to be inclined still more towards the ground than I do. I begin the first incision rather low, about two fingers' breadth above the anus: the bulb of the urethra will then be avoided. In fact, the external incision if commenced higher, can be of no use to the operator; and I find that this, the upper part of the wound, is often slowest to heal. For the division of the prostate, I use the long straight knife, with the beak in the middle line of the point; and I feel confident that it is the safest and best instrument that can be employed."

He gives a caution with regard to the performance of lithotrity.

"Although lithotrity is often very easily performed, it is necessary that the patient's health should be brought into a favourable condition for the operation; the same care should be taken for a few days at least both before and after it as in other important operations. It has been too much the custom of late years to regard the operation of lithotrity as a light one, and to pay but little attention to the subsequent management of the patient. In one case in which I operated, the patient rode in a jolting vehicle from my house to Wandsworth, the consequence of which and of the operation (though it was performed without difficulty) was an attack of fever which confined the patient for some weeks. In another case, considerable hæmorrhage followed, which I attributed more to the exertion afterwards than to the operation itself. I have come, therefore, to the determination not to perform the operation of lithotrity except at the patient's house, and to keep him quiet for several days after each operation."

Mode of Applying Leeches to the Prostate.—Mr. Coulson refers to a plan

employed by Mr. W. Craig in a case of diseased prostate. It consists of a tube into which is fitted a piece of wood, with a handle at one end, while the other terminates conically in a blunt point, for the purpose of gradually dilating the rectum. When this is effected, the wooden dilator is to be withdrawn, and a box of proper size to fit the tube, and capable of holding three or four leeches, with a piece of wire to form a handle fixed into the bottom of it, is to be pushed through the tube.

It is necessary to lubricate the wood and the tube with oil previous to using it, and in introducing it, it should be directed towards the rectum in order to prevent its coming in contact with the tender prostate.

Application of Iodine to the Prostate.—Mr. Coulson quotes Mr. Stafford's method of applying iodine to the gland. "A bougie," says Mr. S., "is to be charged at its point with the iodine, iodide of potassium, or any other substance you may wish, and then dipping it into melted tallow, so that a coating may be formed upon it: by such method I have been enabled to introduce any application I might desire up to the prostrate gland, without touching the surface of any other part of the urethra. The bougie having reached the desired spot, its point is allowed to rest upon the diseased part, when the tallow gradually melts, and brings the iodine or iodide of potassium into contact with it, and by drawing the bougie gently backwards and forwards, the necessary friction is produced. I have found it advisable to be very cautious as to the strength of the application, for the prostate gland will not bear a strong preparation either of the iodine or iodide of potassium at first. It is usually in an irritable or inflamed state, consequently, even the mechanical pressure of the bougie will give pain. The preparations I have therefore used have been very mild. At first I have found it necessary to employ even anodynes, such as belladonna, opium, hyoscyamus, &c. to quiet irritation and pain. When these have subsided, I have begun carefully by introducing the iodide of potassium, in the proportion of one grain to the drachm of unguentum cetacei, and increasing it as the patient could bear it: I have then gone on with two, three, four, five, and even as far as ten grains or a scruple to the drachm, according as the case required it. After this I have added iodine to it, half a grain, one, two, three, four, and even more grains in the same manner."

Again we beg to recommend the work.

Clinical Review.

KING'S COLLEGE HOSPITAL REPORT FOR 1842. WITH REMARKS.

By WILLIAM AUGUSTUS GUY, M.B.*

During the year 1842, 1383 patients were admitted into King's College Hospital; of this number, which, however, is exclusive of casualties, and includes 180 midwifery cases, 93 died, being as nearly as possible 1 in 15, or 6·72 per cent.

On examining the number of the several diseases which occurred in the several months and quarters of the year 1842, and which will present a tolerably correct view of the sickness prevalent in the central districts of the metropolis, it appears that the class of febrile affections, the contagious exanthemata, catarrh, diseases of the organs of digestion, and the mixed group, including struma, gout, plethora, &c. resemble each other in the order of frequency, the greatest number of cases of each class occurring in the third and the least in the first, quarter; and that the quarters come in the following order, beginning with that in which the fewest cases occurred;—*first, fourth, second, third.*

The affections of the organs of respiration follow the inverse order of the classes just mentioned, the quarters appearing in the following order;—*third, second, fourth, first.* Rheumatic affections, and diseases of the urinary organs follow in the order 1, 2, 3, 4; diseases of the nervous system, of the skin, and those of females, appear in the order 1, 4, 3, 2; those of the circulating system are represented by 1, 2, 4, 3; and this is the order of the syphilitic disorders.

On looking to the general total of all diseases, the first quarter is found to be the most healthy, then the last quarter, whilst the second and third present the greatest amount of sickness. The months come in the following order, beginning, as before, with the most healthy,—January, March, April, December, February, November, October, May, July, September, June, August. The amount of sickness, however, by no means corresponds with the mortality, as will be seen by referring to the Registrar-General's table of mortality for the Metropolis for 1842, which will be found in another part of this Journal.

REMARKS.—*Febris Continua.*—But few cases of continued fever appear in this or in the two preceding reports. In fact, 1840, 1841, and 1842 have been remarkably free from fever. There is, however, every indication of an approaching epidemic in the present year.

Infantile remittent fever.—Cases of this were greatly in excess during the third quarter; two-fifths of the number occurring in the months of July, August, and September.

Catarrh.—This could scarcely be said to have been epidemic during the past year; the numbers in the several quarters being nearly the same. In 1841, the proportion of cases of catarrh and influenza to the total number of patients, was as 1 to 19—in 1842, as 1 to 27.

Muscular Rheumatism.—This disease was most prevalent in the last two quarters of the year. The larger number occurred in December, after a sudden change from severe cold to the mild temperature of Spring.

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* Medical Gazette, March 10th.

Spinal Irritation, Pleurodynia, Muscular Pain of the Abdomen.—These include many cases of what are usually termed hysteria. Spinal tenderness is generally accompanied by pain in the abdominal parietes, more rarely by acute pleurodynia, and in other cases by pain in both these situations; the pain is often so acute as to make the patient cry. Perhaps there is no suffering which so often makes the patient cry as that produced by muscular pain. As a matter of diagnosis, this fact is worth remembering, as pain connected with more severe disease rarely expresses itself by tears. Whenever a female presents herself in tears, complaining of acute pain in the chest or abdomen, the spine should be examined, when pain will generally be discovered about the dorsal region of the vetebral column. On striking this, pain will be felt not only in the spine, but darting towards the affected muscle. When cough is present, it will be produced in like manner by striking the tender portions of the spine.

Phthisis.—A marked disproportion in the number of cases of this disease occurring in the two sexes, was seen in this, as in the preceding year. For the three years, the total numbers were—males 650, females 302, or 7.12 per cent. for males: 2.95 for females, and 4.92 for both sexes. Consequently the proportion of males to females is as about 7 to 3. Or, in males, consumptive cases form about a fourteenth of the total number of cases; in females, about a twenty-third; and in the two sexes together, about a twentieth.

Mimosis Inquieta.—This is a term used to express that restless, uneasy, nervous state into which females are apt to be thrown by sudden shocks, by long-continued anxiety, or by slow drains upon the system. The principal causes are, fright, anxiety of mind, suppression of the menstrual discharge, debilitating discharges, &c. It is also frequently present during convalescence from debilitating causes. The treatment consists in a combination of tonics and sedatives.

SOME CASES OF SUPPURATION IN UNUSUAL SITUATIONS. By HENRY JAMES JOHNSON, Assistant-Surgeon to St. George's Hospital.

There is nothing very striking in the following cases, but perhaps, they may be considered not entirely devoid of practical interest, for no inconsiderable portion of the duty of a surgeon consists in the detection and discharge of confined matter.

CASE 1. *Abscess behind the Mamma—Puncture—Cure.*

I have already related the particulars of this case at the Westminster Medical Society, and it was subsequently reported in the Lancet, and quoted in a late number of this Journal. I shall merely refer to the main points.

The patient was a middle-aged woman, the wife of a poor tradesman, who had long laboured under dyspepsia and an indifferent state of health. She was emaciated, and in that condition in which malignant disease might be supposed likely to occur. The menstrual discharges were regular, and she had been a mother some months prior to my seeing her.

She applied to me with a painful swelling of the left breast, which she supposed was cancer. Several surgeons had seen it, and had told her that it was a tumour of the breast which would probably be serious. On examining the breast carefully, it was found to be slightly enlarged, hard, and nodulated; manipulation gave but little pain, but she complained of occasional lancinating pains shooting through the gland, somewhat resembling those which accompany the progress of scirrhus. There was no retraction of the nipple. There was an obscure sense of fluctuation, but whatever the fluid might be, it was very deep-seated. I ordered some leeches and prescribed some medicines, which I need not mention

In three weeks, the tumour had slightly increased in size, was more tender upon pressure, and communicated a rather more distinct, though still very obscure sensation of fluctuation. I thought that it might be a deep-seated abscess, and plunged a grooved needle through the substance of the breast; the needle, however, was wiped clean by the mamma, and furnished no satisfactory indication of any kind. Still convinced that there was deep-seated matter, I thrust in a lancet, when a large quantity of pus issued, revealing an abscess in the loose cellular texture, between the mammary gland and the pectoral muscle. A piece of lint was introduced into the wound, and the orifice kept patent, by the uniting edges being occasionally forcibly torn asunder; a method which is a valuable one to employ in cases such as this, as in time a mucous membrane is formed, which lines the aperture, and prevents its closing. I prescribed tonics, and sustained the general health. I found one aperture insufficient to evacuate the abscess thoroughly, and was under the nesessity of making another and a dependent counter-opening. Both remained patent for some time, then closed, the depressed scars subsequently showing the mamma adherent to the subjacent textures.

This is not uninstructive. Two other cases of abscess behind the mamma have been related, in one of which the gland was extirpated, and in the other the result was unfortunate. In neither, I believe, was the real nature of the affection recognised in time.

I have twice seen the mamma removed for chronic abscess in its substance. The disease was, of course, mistaken for scirrhus. And circumscribed suppuration in the centre of the mamma, or behind it, might readily be confounded with solid tumour of the breast by one who made a hasty or a superficial examination.

CASE 2.—*Abscess beneath the Pectoral Muscle, pointing in the Axilla and beneath the Clavicle.*

A mother brought me her infant, about ten months old, as an out-patient at the Hospital. The child looked ill, but was not greatly emaciated, though feverish and evidently suffering pain.

There was a swelling in the axilla, tense, without discolouration of the skin, and communicating a not very distinct sense of fluctuation. The pectoral muscle, about an inch below the clavicle, was thrown forward, and also felt tense, and as if there were fluid beneath it. The swelling had formed gradually, and existed for two or three weeks. The mother could assign no cause for it.

The case appearing to be one of abscess beneath the pectoral muscle, pointing principally in the axilla, I opened it freely with a lancet, in the latter situation, concluding that the aperture there would evacuate the cavity. But in this I was disappointed. In spite of every precaution, and of very free divisions of the integument and axillary fascia, &c., the wound *would* contract, and matter collected beneath the muscle. I determined to introduce a probe from the axilla beneath the muscle, cut down upon its point, and then draw a seton from the one opening to the other. But the point of the probe was placed too deeply on the front of the chest to justify this measure. Disappointed in this, I passed a stick of lunar caustic deeply into the axillary wound, and moved it about freely to secure a free exit for the matter. The effect was contrary to what was contemplated, for the irritation of the caustic fortunately led to some fresh inflammation. The part of the suppurating cavity beneath the pectoral muscle became shut off from the axillary portion, a *distinct* abscess formed, and rapidly advanced beneath the pectoral muscle, and in the course of a week it pointed sufficiently to be with propriety opened. After this the child did perfectly well.

The occurrence of such a collection of matter in such a situation, at so early an age is probably unusual. Indeed, I have never seen an abscess beneath the pectoral muscle, independently of injury in another instance. It might naturally have been supposed that a dependent opening in the axilla would be sufficient. The result proved otherwise.

CASE 3.—*Congenital Abscess on the side of the Neck.*

Another female, brought me her child, three or four months old, on account of a large swelling on the right side of her neck. It occupied the space from the clavicle to the mastoid process, and from the median line to beyond the border of the trapezius. The skin was undiscoloured, the tumour rather painful, and it felt elastic, as from fluid in it. The child's health was tolerable, there was little pyrexia, but it seemed much distressed. The mother said that the swelling had existed from birth, but had latterly increased, and interfered with breathing.

I made a puncture with a grooved needle, and found pus and blood in it. I then made a pretty free opening with a bistoury, and discharged about three ounces of pus. The child shortly got well.

The case looked at first like one of aqueous cyst in the neck. The history favoured the idea. But there was no transparency, and the puncture with the grooved needle decided the matter. For the pus was thick, and, in all respects, that of a chronic abscess.

CASE 4.—*Neglected Bubo—Suppuration, proceeding in the course of the Deep Femoral Artery—Opening beneath the Gracilis.*

A gentleman, between 30 and 40 years of age, in the civil service of India, from which he had returned to Europe on sick-leave, applied to me on account of a swelling at the upper part of the right thigh. The front of the limb, below the ligament of Poupart, and for five or six inches downwards bulged forwards, looked globular, presented some sub-cutaneous œdema, with little reddening of the skin, but a sense of deeper fluctuation. Besides this, there were several enlarged glands in the groin. He looked ill, and many years older than he really was, a circumstance accounted for not only by his residence in India, but by habits of great excess.

It appeared that some months before he had contracted a sore on the penis. A bubo followed this, which had been opened. He had taken some mercury, and the sore had healed, while the opening in the groin was nearly so, when he left Edinburgh, where he had been under treatment, and proceeded to Cheltenham. He was directed to walk and ride, although there was a good deal of fulness in the groin, and some degree of pain there. The swelling remained nearly stationary, when, about ten days before I saw him, being then in London, he contracted a gonorrhœa. For this he applied to a chemist, who gave him a very strong mixture containing capivi and other ingredients. The discharge immediately ceased, and the swelling in the thigh suddenly increase to the dimensions it presented when I saw him.

Believing that I had to do with deep-seated abscess of a formidable kind, I directed him to go to bed and foment and poultice the limb. In the course of a day or two I cut on the most prominent part, which was then nearly opposite the ligament of Poupart, and discharged about a quarter of a pint of matter. Another fluctuating point soon presented itself about the pubes. This I cut upon also, and found that it communicated with the former. But still there was deep-seated swelling, pain, and, I thought, fluctuation in the limb. I therefore cut on the fascia lata about two inches below the fold of the groin, and cautiously laid it open by a crucial incision. It was satisfactory to find that matter welled up freely from the interior of the thigh, apparently through the channel that the profunda femoris traverses. But although the discharge was now profuse, it was evident that pus was collected in the limb. It was of great size, œdematous, particularly on the inner side—and the constitutional symptoms were of a grave character. It appeared to me that, as the matter took the course of the profunda, the only chance of effectually discharging it and of saving the patient, was to cut on the inner side of the limb, behind the gracilis muscle, and turning up its border, arrive at the inclined plane of the adductor magnus, which would pro-

bably lead to the seat of the accumulation. I requested the assistance of Sir Benjamin Brodie, who kindly gave it, and supported the view that has been stated. It was carried into effect with the happiest result. After dissecting very deeply in the direction referred to, we were gratified by finding the matter ooze out from the bottom of the wound. We endeavoured at first to cut on the end of a long probe passed from the wound in the groin, but the depth of its point, and the pulsation of the femoral or the profunda felt on it, rendered this unsafe, and we fell back on the *anatomical* dissection.

It is unnecessary to pursue the details of the case. For some little time the situation of the patient was precarious, but the matter drained off, the constitution rallied, and after the lapse of two or three months, he was in a situation to remove to the country and returned in perfect health last Autumn to India.

Any comments on this case would be superfluous, as the facts speak for themselves. But I may be permitted to observe, that it seems to offer another warning against that indiscriminate treatment of gonorrhœa during its inflammatory stage by stimulants, unfortunately too generally adopted. Not a year elapses without my witnessing the worst results from what I must consider unscientific, and, I am sure, is dangerous practice.

CASE 5.—*Very extensive Chronic Abscess of the Hip and Thigh.*

The following case is introduced, not because there is anything peculiar in the situation of the abscess, but on account of its extent. It has never occurred to me to see one of such dimensions.

Miss J., about 30 years of age, residing at Brompton, consulted Dr. James Johnson last Autumn for her general health, which had long been indifferent, and showed him a swelling on the right hip. By my father's wish I saw the lady, who placed herself under our joint care.

The swelling was evidently a fluctuating one. It extended from more than half way down the thigh to the crest of the ilium, and on tapping one extremity, a long wave was seen to run up or down the limb. In width it reached from the front of the buttock to the back, and occupied the whole outside of the thigh below. The skin was undiscoloured. There was very little tenderness or pain; nor was there much febrile excitement in the system, although there was a good deal of cough, and the condition of the lungs was unsatisfactory.

I learnt that the patient had suffered from symptoms of a phthisical character for some years, and had been confined for more than one Winter to the house. Last Summer she went to Belgium, and was laid up at Antwerp with pain in the hip and thigh, which were treated as rheumatic. The limb was not examined. Finding that she grew worse rather than better, she returned to England, and immediately sent for Dr. Johnson.

There could be no doubt that the case was one of chronic abscess, and it was determined to treat it in the manner adopted by Sir Benjamin Brodie. A moderate puncture was made with a lancet in a dependent position, and the matter was allowed to drain out as it would, under the influence of warm fomentations and poultices, unaccompanied with pressure. The quantity that issued was very great; I regret that it was not measured. After a few days the opening closed, when the contents of the sac began to accumulate. When this had gone to such an extent that the sac was again filling, a second puncture was made, and a great deal of matter was again set free. This second puncture was gently kept open by pulling the edges asunder now and then. Re-accumulation was prevented, the sides of the sac came together and apparently grew so, for the discharge became scanty and only serous, and now for some time a mere aperture has remained, giving issue to a little almost undiscoloured serum.

This case is remarkable for the great size of the abscess, and the facility with which it was cured.

Spirit of the British and American Periodicals.

DR. GARDNER ON CALOMEL.

"In Dr. Pereira's well-known work, the article *Chloride of Mercury*, sets forth very strikingly a great discrepancy existing in medical authors upon its therapeutic uses and effects. Its employment in hydrocephalus—Asiatic cholera—for the general purposes of a mercurial—and as a purgative, has been watched by innumerable practitioners, and their reports, compiled from very numerous sources, present assertions so directly opposed to each other, that Dr. Pereira says they appear to him to be irreconcilable. He quotes a passage from Gölis, to which I must invite your attention:—

"'Wytt, Colier, Quin, Wilmer, Liel, and others,' says Gölis, 'gave calomel internally in far larger doses, as two, three, and more grains at a time, and continued its use many days in the same dose, without considering the many evacuations from the alimentary canal, or the violent cholic pains; and they affirm, that they have never remarked from the effect of this agent given in these large doses, any bad consequences in the abdomen. Melancholy experience compels me to contradict them. Many times I saw, under those large and long-continued doses of calomel, the hydrocephalic symptoms suddenly vanish, and inflammation of the intestines arise, which terminated in death. Still oftener I observed this unfavourable accident from an incautious use of calomel in croup; viz. where all the frightful symptoms of this tracheal inflammation, which threatened suffocation suddenly vanish, and enteritis develop itself, which passed rapidly into gangrene, and destroyed the patient.'

"After this quotation Dr. Pereira proceeds to collect cases in which calomel has been found to act as an irritant poison, and others in which very large doses have produced effects which have led to its being denominated a *sedative*. This class of effects has been witnessed more especially in the treatment of cholera, and the authorities upon which the reports depend are so unquestionable, that it must be admitted as an established fact, that more cases of severe cholera have recovered under the use of prodigious doses of calomel than by any other means.

"'We have the concurrent testimony of many practitioners that, in yellow fever, cholera, and other dangerous diseases, calomel in doses of a scruple and upwards, allays vomiting and purging and is actually sedative.'

"'I do not pretend,' says Dr. Pereira, 'to reconcile these cases with those recorded by Kellewig, Vagritius, Ledelius, Hoffman, and Gölis; in fact, they appear to me irreconcilable. Dr. Christison, however, suggests that, in those cases in which violent effects occurred, the calomel might contain corrosive sublimate.'

"These discrepancies admit of another explanation, which will suggest, I hope, still further practical investigations than those I am about to relate.

"Many years ago it happened that my attention was powerfully drawn to the subject of hydrocephalus, and I was led to study carefully the earliest symptoms which indicate its approach. A well known circumstance in the history of this disease, namely, the great probability of its occurrence to other children in a family where one has been cut off by it, induces parents to watch very carefully for such symptoms as they are instructed to look for, and to seek our aid early. The effusion of fluid into the cavities or upon the surface of the brain, which gives a name to the disease, was long since admitted to be the result of a previous state of inflammation, and afterwards it was established that it is seldom that the

symptoms of inflammation occur without a longer or shorter continuance of another state, to which the term *erythism* was applied by Dr. Whitlock Nicholl: more commonly, however, this state is designated *irritation*. An inseparable concomitant of that state of the infantile brain which is so called, is the occurrence of *white stools*, an appearance manifestly depending upon an altered condition of the bile. It is an interesting and important question, which of these circumstances precedes the other? Is the disturbance in the functions of the brain the *cause* or the effect of this remarkable action of the liver? We can prove that it is the brain, which, from whatever cause it may take on this diseased action, produces a secondary affection of the liver, discolouring its secretion; and the proof is this—that the brain is subject to a deviation from its normal state, antecedent to and irrespective of the irritation or erythism, an irregularity in its growth, traceable in the external form of the head to which, in a published pamphlet, I have applied the term *kephalosis* or morbid head. In children whose brain is developed in an irregular or abnormal manner, the state called erythism is peculiarly liable to occur, and its concomitant condition of the liver giving rise to white stools. Thus, it is certain the brain-affection is the *cause* not the *effect* of this symptom. It is also important to remark, that the white stools arising from brain-irritation are almost always associated with diarrhœa.

"Now, laying aside the authorities for the use of the chloride of mercury in hydrocephalus and inflammation, its old repute for an action directly upon the liver naturally gave rise to its application in this state of disease. It was, however, found by many practitioners to add to, rather than diminish the evil, by purging, irritating the abdominal viscera, and producing a disease worse than that it was intended to remove. In my first attempts to treat these cases with calomel, I met with such a decided check from these untoward symptoms, that for some time I laid aside its use altogether, and tried to accomplish the desired purpose by such general means as medical authors have recommended. Accident, however, led me to notice a very remarkable difference in the physical appearance of two specimens of calomel, and at the same time a remark occurred to me, made by Dr. Plummer, in his paper in the Edinburgh Medical Essays, where he recommends his well-known pill, 'that it is in vain to look for the beneficial effects of that pill, unless the materials are well levigated together and for a considerable time." This suggested to me that the irritant effects of my calomel might have depended upon some difference in its physical state. I therefore resolved to try the new specimen, which was whiter in colour and considerably less in gravity; and in order to insure its minute subdivision, I had it triturated for a long time with an equal quantity of chalk. The result was, that a totally different effect followed its use in these cases of brain-irritation in children; instead of adding to the irritation and increasing the purging, the first effect of a large dose—two, three, or more grains upon an infant, was always what is called sedative; that is, whereas the morbid restlessness or sleeplessness which is the characteristic of the disease, might have lasted one, two, or more days and nights, a long quiet sleep followed immediately on its exhibition, and upon following it up with repeated doses, the stools became less frequent, and changed at first to a green colour, and afterwards became natural both in colour and texture, and the child was restored to health. It is upwards of ten years since I recognised this important difference in the therapeutic effects of different kinds of calomel, during which time I have administered it in hundreds of cases without a single instance of the occurrence of injurious effects. And it happens constantly that parents apply to me for these white powders, under the impression that they contain some sleeping drug, more safe than opium or any of the usual narcotics.

"I have been content to employ the calomel I thus found to answer my purpose without further inquiry, until, very recently some circumstances drawing my attention again to the subject, I referred to Dr. Pereira and other writers, and

finding the discrepancies before mentioned, I deemed the subject worthy of further research.

"In the first place, to determine the question as to the difference in the physical state of the various specimens, I examined several under the microscope, and found that crystalline fragments could be detected in some specimens in considerable proportions, and of far larger size than in others, every specimen I could procure varying much in this respect, although all of them were perfectly impalpable. The fine white light calomel I have been accustomed to employ, giving much fewer and far more minute crystalline particles than the calomel procured at Apothecaries' Hall, and of some celebrated makers. Being desirous of ascertaining by what process the former was prepared, I wrote to Mr. Davy, the maker, who kindly informed me—

"'That his method of making chloride of mercury consists in forming the sulphate in the usual manner, and after mixture with chloride of sodium, subjecting it to distillation into a dry chamber, repeating the process two, three, or more times, until the chloride comes over quite white, and entirely free from perchloride. The advantages of this process Mr. Davy considers to be, its avoiding the powdering and washing, and yet obtaining a perfectly pure chloride in the state of an impalpable powder of a very white colour.'"*

REMARKS ON THE EFFICACY OF VACCINATION IN THE PARISH OF BIRMINGHAM

By HENRY KNIGHT, Esq.†

Alluding to the necessity which existed for the late Vaccination Act, Mr. Knight makes the following statements with regard to the amount of small-pox in Birmingham before and after the coming into effect of the Act.

During the last three months of 1840, small-pox prevailed to a frightful extent, amounting to full 11 per cent. of the entire number of deaths in the parish; and in the most central district, 23½ per cent. died of small-pox. From the 1st of January to the 7th of February, in 1841, nine deaths from small-pox were registered in the same district, being equal to 20 per cent. of the whole number of deaths.

At the commencement of the year 1841, the provisions of the Vaccination Act were carried out, and, apparently, with the most happy results. During 1841, 1481 persons were successfully vaccinated, and in 1842, the number was 850.

The consequence was, that during the whole of the year 1842, but 10 deaths were registered in the entire parish of Birmingham as caused by small-pox, being about 1 in every 358 deaths, instead of 1 in every 9 deaths, as was the case in the quarter ending Dec. 31, 1840. And further, not one of these 10 deaths has occurred since the month of April last, so that for many months it would appear that no death has been caused by small-pox in that parish.

CONGESTIVE PNEUMONIA, CONSEQUENT UPON OPERATIONS, &c.

By Mr. ERICHSEN.‡

In a paper lately read to the Medico-Chirurgical Society, Mr. Erichsen contends, that in the diseases and injuries which come under the care of the surgeon, and

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* Pharmaceutical Journal, Vol. 2, No. 9.
† Provincial Medical Journal, March 11th.
‡ Medical Times, Feb. 18.

in operations generally, a form of inflammation of the lungs, characterized by its asthenic nature, and different from that which is dependent on the absorption of pus, is a frequent attendant. This inflammation differs from active idiopathic pneumonia, and resembles more that condition of the lungs occasionally found in typhus, and other diseases of debility. Congestive pneumonia, however, is specially marked by an engorged and condensed condition of a considerable part, and that most frequently the inferior and posterior part of these organs. The blood, under the influence of depressing causes, such as confinement in the recumbent posture in impure atmosphere, and the irritative fever consequent upon wounds or profuse discharges, stagnates in the lungs; irritation is set up, passive inflammation is excited.

In the first stage, the affected parts are of a livid, violet or purple-mottled colour, heavy, compact, but friable, readily breaking down into a grumous pulp, and scarcely crepitating when pressed upon, but exuding a very considerable quantity of their spumous frothy fluid. In the second stage, the tissue is more dense, but still friable, it does not crepitate, but sinks in water, and when cut into, presents a smooth uniform black aspect, caused by a highly gorged state of the capillary network of the lungs compressing the air-cells, which are either empty, or contain, almost, a thin, serous fluid.

In order to establish this proposition, Mr. Erichsen presents a table containing a record of 62 post-mortem examinations of the lungs in patients who had been treated in the surgical wards of the University College Hospital. He arranges his cases into four classes, and finds, first, that of those in which the presence of a pneumonia was evinced by the diseased condition being confined to one lung, by its having advanced to solidification, or by its being combined with inflammation of the pleuræ or bronchial mucous membrane, there are 28 cases, or nearly one-half of the total number. Secondly, that of doubtful cases, in which the lungs presented the characters common to the first stage of pneumonia, and to passive congestion, without their being collateral signs to establish the diagnosis, there are 11. Thirdly, that of cases in which the lungs were diseased, but not inflamed or congested, there are 9. Lastly, that of cases in which the lungs were found to be perfectly healthy, there are 14. He further states that of the 28 cases included in the first class, the pneumonia had advanced in 17 to the second stage of hepatisation.

A New Mode of Employing the Nitrate of Silver in certain Ophthalmic Affections. By M. Desmarres.*

M. Desmarres is of opinion that there is a similitude of action on our tissues between astringents and cold water, between caustics and intense cold. That consequently nitrate of silver acts as cold water if applied weak, as intense cold if applied strong. That if, therefore, nitrate of silver is applied in a weak form, much re-action is to be feared, giving rise to the necessity of having recourse to the antiphlogistic treatment. At the same time it is not generally expedient to employ it as a caustic, because, an eschar being once formed, the subjacent tissues are removed from the action of the medicine. The collyrium, therefore, which M. Desmarres employs is of the strength of from 7 to 15 grains of nitrate of silver to 2½ drachms of water, according to the amount and duration of the photophobia, this, which but seldom whitens the mucous membrane, is to be instilled into the eye every half hour during 24 hour without interruption. During the first two or three hours, considerable pain is experienced, this being the usual period neces-

* Medical Gazette, March 10th.

sary for the establishment of tolerance; after that time, however, the pain will subside. In this manner the diseased eye is not liable to re-action. At the end of six hours, M. Desmarres examines the eye to see whether re-action tends to supervene; if it does not, the collyrium is continued; if it does, the strength of the lotion is increased. In some cases, fomentations of iced water are recommended to assist the action of the nitrate of silver.

After 24 hours, re-action is no longer to be dreaded, but the intolerance of light is not always completely subdued, though the ingestion of the external tunics is usually diminished; in this case the strength of the collyrium ought to be increased, and after 48 hours the ophthalmia is at its second stage; the acute form no longer exists. The instillations are then repeated less often, at length discontinued, and replaced by appropriate general treatment.

By this method, long continued antiphlogistic treatment is avoided, which is of great consequence, especially in scrofulous persons; the increase of inflammation is arrested, and the intolerance of light quickly subdued. Moreover, in case of relapse, this treatment can always be again had recourse to, without inconvenience.

This remedy is not intended to supersede all others; when the photophobia is relieved, all is not accomplished; it is then that the experienced practitioner is called upon to employ remedies capable of restoring the organ to its normal condition.

PORTUGUESE PRACTICE.*

CASE I.—*Ascites complicated with Anasarca and Tympanitis. By Signior J. M. Alvito.*

A woman, aged 41, labouring under these diseases, was cured in four months, chiefly by the endermic application of squill and digitalis, compresses to the abdomen, blisters to the thighs, dry frictions, rubbing-in of volatile camphor liniment, and ligature of the leg. In this case the dropsy was purely asthenic.

CASE II.—*Twin-birth, accompanied by Convulsions. By Signior D. B. S. Cadet.*

A young woman, aged 38, well formed, was seized with the pains of her first labour, accompanied by convulsions. On the following morning she was delivered of a living child, but without the placenta. In spite of repeated bleedings, &c. she remained in the same spasmodic state till the following morning, when she was delivered of a second child and also of the placenta. When seen by our author, she was still in an apoplectic state: the cervix uteri was but slightly open; the hæmorrhage was small. The prescriptions were, twenty-four leeches to the abdomen, copious venesection, sinapisms, &c. In the evening another blister was ordered. The patient improved, and on the fifth day the placenta came away. The reporter observes that he took the violent constriction of the os uteri to be the cause of the retention of the placenta, and employed antiphlogistics with the intention, if they did not succeed, of removing the after-birth, by artificial enlargement of the os uteri. [The translator doubts whether the recovery occurred by means of, or in spite of, the bleedings.]

CASE III.—*Serous Vesicular Swelling of the Liver. By Jos. Pereira e Sousa.*

A foot soldier, æt. 40, entered the hospital with what appeared to be ascites of long standing, combined with recent anasarca. Swelling and pain in the hepatic region, inducing the belief that there had been hepatitis originally, led to

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* Medical Gazette, Jan. 6.

the employment of antiphlogistic remedies. At the end of some weeks the man died.

The section displayed an enormous cystic tumour, which hung down from the right anterior edge of the liver, and was covered by the peritoneum. It contained from 28 to 30 pounds of dark yellow serum, with many albuminous flakes. The liver was pale, not enlarged. It is said, in the observations which follow, that hepatic diseases are very common in Portugal, and that their study and treatment ought consequently to be much further advanced than they are.

The cystic tumour in this instance is remarkable for its enormous size.

ON THE NATURE AND CURE OF BLINDNESS PRODUCED BY OIL OF VITRIOL. BY ROBERT D. THOMSON, M.D.*

It is the general opinion at the present day, that the basis of animal matter is a substance named protein; this substance appears to be a base, and combines with acids. When sulphuric acid is brought into contact with the conjunctiva lining the cornea, which contains at its basis *protein*, sulphoproteic acid is formed, and opacity of the transparent cornea takes place. Our author found, by experiments on dead animals, that this layer of sulphoproteic acid may be removed from the cornea by means of a sharp-edged knife; that fresh application of sulphuric acid will produce fresh formation of sulphoproteic acid, which may be again scraped away, and so on until the whole of the cornea disappears. The question to be decided then was, whether this operation was practicable on the living body. The following experiment was made: a dog was caught, a glass rod dipped in vitriol was rubbed over the cornea, white opacity resulted in a few seconds. The action was allowed to continue for two minutes, the acid being prevented from spreading to the eyelids. The conjunctiva was then removed by means of a pair of scissors, assisted by a scalpel and forceps, and the denuded cornea was then scraped till it appeared to be deprived of its white opacity. Slight dulness remained; in a day or two the perfect transparency of the membrane was restored, and the animal lived for many weeks with complete vision of the eye.

The author thinks he has seen cases in which vision might have been restored, had this operation been performed immediately after the receipt of the injury.

FORTITUDE OF THE MIND DURING OPERATIONS.†

With reference to the late well-known mesmeric amputation, Sir R. Dobson relates the following instances in which operations were borne without eliciting any exclamations of suffering.

When the late Sir Thomas Thompson lost his leg in action, it is well known that he was singing during the time the operation was being performed. In the burial ground at Greenwich Hospital is a monument to a seaman who was wounded at Trafalgar; the epitaph relates that, "while the amputation was performing, he was exultingly singing the patriotic song of Rule Britannia." Another seaman in Greenwich Hospital while losing his leg, said to the surgeon, "Avast a bit while I take a pinch of snuff," coolly took the box out of his pocket, and after having offered a pinch to the assistant-surgeon, took one himself, and the operation was finished without his having uttered a groan.

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* Medical Gazette. Jan. 6th.

† Lancet, January 21.

In none of these cases, it is almost needless to say, was any mesmeric influenc employed.

ACCIDENTS WITH HARD RINGS.*

On the subject of the removal from the fingers of case-hardened steel rings, such as are used for common silk purses, and which no file can touch, no nippers divide, Mr. Thomson suggests the employment of a simple instrument, called a clock-maker's hand-vice, the chops of which are narrow enough to go between any of the finger-joints. By means of a screw, the chops may be closed slowly and just enough to break the ring. This method is only applicable or in fact necessary when the ring is quite hard. If the steel is at all softened, it may be cut by a hard file.

ON THE PRESERVATION OF INFANTS BY INOCULATION. TRANSLATED FROM THE CHINESE, BY W. LOCKHART, M.D.†

It will probably be remembered that Dr. Lockhart published a short time ago a translation of a Chinese Treatise on Midwifery; the present sketch is from the pen of the same author. We shall proceed to give some short extracts from it.

Small-pox arises from poison introduced into the system from the mother's womb; but its form and character is determined by the external impression. "The truth is, that the breaking out of small-pox depends on external impressions; thus disease induces disease, and this eruption makes its appearance."

Inoculation does not appear to be of very recent invention; "it is handed down from the time of Chin Tzung, of the Sung dynasty (A. D. 1014), and was invented by a philosopher of Go-mei Shan, in Sze-Chuen." The author is very indignant against those who are unwilling to be inoculated; it is, he says, "just as if a person, who had indigestion, were to refuse to eat food." The results of inoculation are stated to be very favourable; "out of ten thousand cases not one casualty will occur. Perhaps in one hundred thousand one or two fatal cases may accidentally be met with, arising perchance from bad management in the family, or because the inoculator has not carefully examined into the state of the patient.

Modes of Inoculation.—"Several pustules are to be chosen, and rubbed down in a cup with a piece of bamboo, or a twig of willow; then taking a fragment of cotton, rolled up into the shape of a date-seed, with this absorb the whole of the moistened lymph, and insert it into one of the nostrils, in the boy *on the left side*, in the girl *on the right.*" "This is called the *watery inoculation;* it is safe, and may always be trusted." This pellet is to remain in the nostril for twelve hours, at the end of which time, "the spirit of the lymph enters the body, and gradually diffuses itself through the fine parenchymatous viscera." There are also other modes, the cotton may be moistened with variolous lymph; this is called the *lymph inoculation.* "The pustules being broken, you take the lymph; the child must be ordered to hold its mouth, but this is difficult to bear." Or you may put on the clothes of a child affected with this disease and soiled with lymph; this is called *clothes inoculation.* Or you may dry and pound the crusts, and then blow the powder up the nostrils; this is called *dry inoculation;* "and by following one or other of these plans the inoculation will surely take effect."

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* Lancet, January 21. † Dublin Journal, March.

Mode of Action.—The variolous matter takes rather a curious course. When the lymph is placed in the nose, its influence is communicated to the lungs, the lungs govern the hair and skin; the lungs transfer the poison to the heart; the heart governs the pulse and transfers the poison to the spleen; the spleen governs the flesh and transfers it to the liver; the liver governs the tendons and transfers it to the kidneys; the kidneys govern the bones." "The poison of small-pox lies hid originally in the marrow of the bones;" but when it manifests itself, it spreads in the following order:—the poison passes wholly from the marrow into the tendons, and the poison which was concealed in the kidneys is dissipated; from the tendons it passes into the flesh, and the poison of the liver is dissipated; from the flesh it passes into the blood-vessels, and the poison of the spleen is dissipated; from the blood-vessels it passes into the skin and hair, and the poison of the heart is dissipated; from the skin it passes wholly into the pustules, and the poison of the lungs is dissipated." The variolous lymph thus traverses the whole of the viscera to arrive at the bones, where it dislodges the small-pox poison which had remained snugly concealed there from birth, and makes it follow the same course out of the body, which the lymph had taken in entering.

In inoculating, however, there is one most important circumstance which ought always to be attended to, namely, *the choice of lucky days*. "The eleventh day of the moon ought to be avoided, for at that time a person's spirit is in the pillar or septum of the nose; also the fifteenth day of the moon, because on that day the spirit is in the sides of the body.

RELATIVE FREQUENCY OF AFFECTIONS OF DIFFERENT ORGANS IN CASES OF BURNS.*

Mr. Erichsen has contributed to the Medical Gazette some valuable observations on the lesions of internal organs, consecutive to burns. The relative frequency with which different organs are affected at different ages has been set forth in a tabular form. Of the cases that he refers to, 29 occurred below the age of 14 years, and 20 above that epoch.

Of the 29 cases, below the age of 14,—

The brain and its membranes were not examined in	8	
They were healthy in	4	
——— diseased in	17	or 80·9 per cent.
The thoracic viscera were not examined in	5	
——— healthy in	6	
——— diseased in	18	or 78·2 per cent.
The abdominal viscera were not examined in	2	
——— healthy in	6	
——— diseased in	21	or 77·7 per cent.

Of the 20 cases that occur above the age of fourteen;—

The brain and its membranes were not examined in	5	
——— healthy in	0	
——— diseased in	15	or 100 per cent.
The thoracic viscera were not examined in	3	
——— healthy in	3	
——— diseased in	14	or 82·3 per cent.
The abdominal viscera were affected in	13	or 81·2 per cent.
——— healthy in	3	
——— not examined in	4	

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* Medical Gazette, Jan. 20, 1843.

ON THE FRUITS OF HEMLOCK AND ANISE. By JONATHAN PEREIRA, M.D.*

The resemblance between the fruits (usually called seeds) of ainse and hemlock, is such that one may readily be mistaken for the other by a superficial observer. A case of poisoning which has recently occurred in France from an error of this kind, induced Dr. Pereira to lay the following account of the distinctive characters of the two fruits before the Pharmaceutical Society.

The following is a brief sketch of the case referred to.

A gentleman who had at various times derived benefit from the use of an infusion of anise, took, on one occasion, his usual medicine without deriving the accustomed relief. On the contrary, he experienced after its use various alarming symptoms, such as extreme uneasiness, followed by slowness of pulse, coldness of extremities, and other complaints, all of which ceased after copious vomiting. The physician who had been called in, having declared that the symptoms resembled those of poisoning, the remains of all the substances which had been used at table were examined, but without any noxious ingredient being detected. A fresh infusion of anise was prepared and taken, the same symptoms followed. The water, sugar, and anise were now carefully examined. In the two first nothing injurious was found, but in the anise some suspicious fruits were detected, which Professor Richard declared to be those of hemlock. They were recognized by the five grenulated ridges which each mericarp or half-fruit presented.

1. *Hemlock Fruits.*—The so-called hemlock seeds of the shops consist principally of half-fruits (*mericarps*), with some few entire fruits (*cremocarps*), rarely with a portion of the stalk attached. The entere fruits are roundish, ovate, compressed at the sides, about one line in length, and seldom exceeding one line in breadth. The half-fruits are arched on the outer side. Each has five prominent equal ridges, the lateral ones being marginal. All the ridges have a notched appearance, that is, they are wavy, and have small convex teeth. Examined by the microscope, the elevations have a tuberculous appearance, sometimes being placed on the edge, at others somewhat on the side of the ridge. The channels or furrows are striated, but have no vittæ. The inner face of each mericarp presents a longitudinal line, or deep narrow furrow, indicative of the involute albumen. The seed in shape somewhat resembles the coffee-seed of the shops, being arched or convex on the outer side, and nearly flat with a longitudinal furrow on the inner side; but it is somewhat tapering superiorly. The albumen is rolled inwards, at the edge or side (*involute*), so as to form a longitudinal furrow. When examined by the microscope, it presents a granular appearance.

2. *Anise Fruits.*—These are called in the shops aniseed. They consist usually of entire fruits, each of which is generally provided with a stalk, of from two to four lines. Sometimes one-half of the fruit is abortive, or only imperfectly developed. The entire fruits are ovate, and slightly contracted at the sides: from one line to one and a half long, and about three-quarters of a line broad, and slightly pubescent. On splitting the entire fruit into its halves, we see the bifid, free-carpophorus to which each is attached. Each half-fruit has five paler filiform, equal, entire ridges; the lateral ones being marginal. The channels are multivittate. The seed is gibbous, convex on its former side, flattish on its inner face (commissure): its albumen is flat, being neither involute nor convolute.

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* Pharmaceutical Journal, Nov. 1, 1842.

ON THE USE OF NITRIC ACID IN CERTAIN HÆMORRHODIAL AFFECTIONS. BY JOHN HOUSTON, M. D.*

The form of hæmorrhodial disease in which Dr. Houston chiefly recommends the use of nitric acid, as an escharotic, is that state of the mucous membrane to which the term "vascular tumour" is applied. Of this there are two varieties, which, although differing somewhat in origin and nature, admit of cure by the same means. One of these is that to which the term "erectile" has been given; the other—a congested, hypertrophied, and tender state of the membrane, the result of irritative or inflammatory action.

The first is regarded by many as a sort of aneurism by anastomosis of the small vessels of the mucous membrane and sub-mucous tissue exclusively, and may be independent from the first of varices, of the general veins about the anus.

The second variety is of a chronic inflammatory nature, and may be compared to the red bleeding surface seen on the mucous membrane of the eyelids in old cases of conjunctivitis. As in the foregoing variety, there is no relief for this affection but in the destruction of the morbid growth.

Dr. Houston is of opinion, therefore, that the seat of the baneful part of the affection lying, as he concludes it does, on the surface, it is better to adopt such means as may remove that surface, *per se*, without extending beyond it, rather than by other, and more severe operations, run the risk of wounding large vessels, or of producing painful and dangerous symptoms.

These means are found in pure nitric acid, which removes, with little pain, and without danger, the tender, tumid, and bleeding surface; and, in the cicatrisation which rapidly follows, a radical cure is effected.

The application of the acid may be made in the following manner. Let the patient strain as at the night-chair, so as to bring the tumours fully into view; and, while they are so down, let him either lean over the back of a chair, or lie down, in the bent posture, on the side on which the disease exists, with the buttocks over the edge of the bed. Let a piece of wood cut into the shape of a dressing-case spitu'a, be dipped in the acid, and then, with as much of the acid adhering to it as it will carry, without dripping, let it be rubbed on the tumour to the extent desired. The due effect of the acid on the part is shown by changing it to a greyish-white colour. If a superficial slough be all that is required, a single application will suffice; if a more deep one, then two or three applications of the wood dipped in the acid may be made in quick succession; and immediately afterwards, the part must be well smeared over with olive oil, provided beforehand for the purpose. The prolapsed parts should then be pushed back within the sphincter, the patient put to bed, and an opiate administered. The pain of the application is sharp and burning at first, but soon goes off, and does not return again in the same form. A general uneasiness about the anus on motion, together with a slight sense of heat, fulness and throbbing, are felt for a few days, and there may be some little feverishness; but Dr. Houston has not seen or heard of any more serious effects from the remedy. The symptoms produced are usually so mild as not absolutely to require confinement to bed for more than a few hours; although, for many reasons, such confinement may often be desirable. On the third or fourth day, a purgative draught should be administered, when the bowels will be found to yield to the medicine, generally without either pain or prolapse of the rectum. The progress after this to healing is rapid, and free from any disagreeable symptoms.

A question may arise as to whether, when two or more vascular tumours coexist, both or all should be touched at the same time. Such will generally be

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* Dublin Journal, March.

the proper course for adoption. The severity of the remedy is moderate, and the great advantage of completing the operation at once, and of having the time for the accomplishment of the cure thereby materially abridged, will be secured by the adoption of this course. The circumstances of the case must, however, often determine such a matter more than any pre-concerted rules.

REMARKS ON OUTWARD APPLICATIONS TO ULCERS. By W. H. O. SANKEY.*

On examining the composition of the more common medicinal applications to indolent ulcers, it would appear that, 1st, their energy on the animal tissue, and their caustic properties are in direct ratio to the rapidity with which they part with their oxygen; and 2d, the bases of those compounds which experience has taught us to prefer, are, when deprived of their oxygen, perfectly inert, and that their affinity for oxygen is comparatively slight.

Three qualifications, therefore, appear necessary to constitute a good outward application to an indolent ulcer. 1st. A substance containing a large proportion of oxygen, or of an electro-negative body. 2d. A compound that will part with its oxygen to the animal organism moderately slowly. 3d. A compound whose elements, when its oxygen is abstracted, possess no chemical or solvent powers on the tissues, nor poisonous effects on the body generally.

Guided by these views, Mr. Sankey is led to recommend the employment of various compounds to indolent ulcers, such as the iodate of the protoxide of mercury in the strength of ϑss. to 3ss. to the ounce of lard; the iodide of starch; the oxide of silver; pectic acid applied as a poultice: the iodate of peroxide of mercury; the preparations of periodic acid, the bromates; succonates; the precipitate formed by tr. opii on Goulard water; mucic acid; alloxan; hydrated peroxide of iron, &c.

In angry and inflammatory ulcers, on the other hand, which are attended with increase of circulation, and, consequently, with excessive supply of oxygen, the oxygenated compounds would be prejudicial. Cold lotions or poultices, for chemical reasons, would be indicated; or, if ointments are used, those only containing a preponderance of electro-positive elements, as ung. cetacei, creosote, &c.; perhaps, also, the application of turpentine, or the non-oxygenated essential oils, as the ol. limon.

EFFECT OF TARTAR EMETIC ON THE GENITAL ORGANS.†

Mr. Griffith relates the two following instances of the appearance of a copious crop of pustules all over the scrotum, after the application of the unguent. antimonii potass. tart. to other parts of the body, no eruption occurring in the situation where the remedy was applied.

In May, 1838, Mr. Griffith was consulted by a young man labouring under symptoms of incipient phthisis; an ounce of tartar emetic ointment was directed to be rubbed on the chest in the usual manner. In the course of a few days the whole of the scrotum was found to be covered with a dense crop of pustules far advanced towards suppuration; the patient was charged with having applied his

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* Medical Gazette, March 10th.

† Prov. Med. Journ. Nov. 12th and Nov. 25th, 1842.

hands to the parts after using the ointment; this, however, he resolutely denied: the pain was soon relieved by cold saturnine lotions, anodyne fomentations, and emollient poultices, &c.

Soon after the above, the following case occurred :—

Mr. J. D., aged 39, a respectable farmer, consulted Mr. Griffith for some hepatic affection; he was, in addition to other treatment, directed to rub in, every four or six hours, a teaspoonful of an embrocation containing one drachm of tartar emetic, on the third day, a dense crop of pustules was found covering his scrotum; he also, like the other patient, protested that he had immediately washed his hands each time after using the ointment. In neither instance was there the slightest trace of any redness or irritation on the part to which the application was directed to be made. Mr. Griffith therefore concluded that "absorption had taken place, and some specific action exerted on or conveyed to the external covering of the scrotum, similar to what is observed in persons who have been labouring in mines containing a great proportion of arsenic, or those who have been exposed to the fumes arising from the consumption or volatalization of arsenious acid in various trades and manufactures."

Dr. Pereira, in his work on Materia Medica, remarks, "occasionally adventitious eruptions have appeared in other parts of the body, which have been ascribed to absorption of antimony into the system. But I believe, with Rayer, that they arise from the inadvertent application of the ointment to these parts." In these two cases, however, such does not appear to have been the fact.

Since the publication of the above, a letter has appeared from Mr. Pitt, of Mattishall, relating the following similar case.

J. D. was ordered to use the tartar emetic ointment for chronic swelling of the knee-joint, after rheumatism, which soon produced a crop of painful pustules on the inner side of the knee, he was then directed to continue the application on the outer side; this soon produced a severe effect upon the scrotum, the pustules here assuming quite a confluent character. He denied having touched the part either with the ointment or his unwashed hands. The patient was of spare habit, and had his scrotum much relaxed by confinement to bed, which probably rendered it more susceptible of the action of the ointment; but whether it was carried to that organ by absorption, or was brought in immediate contact with it by means of the shirt, appears doubtful. Mr. Pitt has seen a similar affection on the scrotum of a lad fifteen years of age, whose mother had been rubbing croton oil over the abdomen, and had carefully avoided all other parts.

EXCURSIONS TO SOME OF THE PRINCIPAL MINERAL WATERS OF ENGLAND. By JAMES JOHNSON, M. D. 1 Vol. Royal 12mo. pp. 160, price 5s. Highley, 1843.

As this work cannot be reviewed in this Journal, an extract or two, as specimens, are all that we can adduce.

ENGLISH AND FOREIGN SPAS.

"There are so many points of comparison and contrast between the foreign and domestic spas, that an ingenious casuist would have little difficulty in proving with much plausibility, the superiority of the German waters over the English, or the *latter* over the *former*, according to the party by which he was retained, or his own fancy. But the medical casuist should plead for truth, and not for

victory—for the good of suffering humanity, not for self-interest. It must be confessed, in limine, that the English mineral waters cannot compete with the Continental, in strength, flavour, or high temperature. But it is not the most potent or the most palatable medicines that are the most useful or efficacious. It is the same with mineral waters. The Soolen-sprudel, at Kissengen, contains three times as much weight of ingredients as the Kochbrunnen, at Weisbaden, yet it is not one-tenth so useful as the latter. Many of the most celebrated waters of the Continent, as Pfeffers, Gastein, Teplitz, Wildbad, &c. have scarcely any active ingredients in their composition.

"But there is another important point to be taken into consideration. There is not one in one hundred of our British invalids requiring the remedial agency of a spa, who can afford either the time or expense necessary for a journey to even the nearest of the German mineral waters. The expense of an English passport, leaving aside the worry of getting it countersigned by the representatives of half the potentates of Europe, would pay the fare of a London citizen to the most distant spa in England! It is very easy, but it is very useless, to tell a man with a large family and limited income, that venison and turtle are better fare than mutton and codfish—or that Champagne and Burgundy are superior beverages to Marsalla and porter. Ordinary people must put up with ordinary provender—and many hundreds of our countrymen and women must be content with Bath instead of Baden—Harrowgate in lieu of Aix-la-Chapelle—Cheltenham instead of Marienbad—and Tunbridge Wells as a substitute for Schwalbach or Bruckenau.

"For the real or supposed inferiority of British spas, the middle classes have some compensation, or at least consolation, in the saving of time and money—the security from a sea-voyage and sea-sickness—the trouble and expense of embarkations and debarkations—the scrambles at foreign hotels—the vexations of passports, police, and douanes—the rough roads, slow journeys, and violent concussions—unaccustomed diet—ignorance of the language—the long and wide separation from friends and native home; at a time, too, of sickness and anxiety. It must be acknowledged that these are only negative advantages—but HEALTH itself is no more than the absence of disease. These negative advantages of the home spa-goer, of middle rank, and which would be converted into positive evils abroad, are little felt by the aristocracy and the opulent classes of this country, who travel to the continental waters in their own carriages—with their own servants and couriers—and with every *portable* comfort which money can procure. To them the inconveniences alluded to, are, perhaps, more useful than otherwise, as breaking the monotony of their lives, dispersing ennui, and abstracting the mind of the invalid from his own gloomy meditations. To all these I would say, go and travel to the spas of Germany, and when you can swallow no more, ascend the Alps and take air instead of water—exercise instead of lounging—and occupy the mountain chalet rather than the splendid cursall.

"But has the home spa-goer no *positive* advantages over the continental pilgrim in pursuit of health? I apprehend that he has—though he may not appreciate them unless he has crossed the Channel.

"Is the superb travelling, whether by rail, stage, or post, through a country, unequalled in Europe for beauty, cultivation, and fertility—*nothing?* Are Macadamized roads, on which we are neither blinded by dust, splashed with mud, or contused in body and limbs—*nothing?* Is the comfortable hotel, where plain and wholesome food can be procured at ten minutes' notice, by day or by night—*nothing?* Are beds six feet in breadth, by eight in length—*nothing?* Is the box-seat of a splendid stage-coach, which whirls us through the fresh air at the rate of 12 miles an hour, amid scenes and landscapes of exquisite beauty—*nothing?* There is, at all events, *nothing* of the kind on the Continent. Are the chalky cliffs, the boundless ocean, and the balmy atmosphere of our sea-girt shores, which may be approached in a few hours from any spa in

England—*nothing?* Is the daily post, through which we communicate with our family and friends—by means of which we can direct our concerns as easily and readily at Harrowgate, as if we resided at Hampstead or Highgate—and all for one penny—*nothing?* He only who has experienced the tiring delays and heavy expenses of foreign post-offices, can appreciate the blessings of the British penny post!

"Is the consciousness that, in the hour of peril, sickness, and distress, our nearest and dearest relations can fly to our succour in a few hours, even from the distant Metropolis—*nothing?*

"Finally, is there nothing consolatory in the anticipation that, should the hand of death press upon us, when absent from our family in quest of health, we shall have the consolations of religion administered by our own clergy, and our native soil as a lasting sepulchre where our ashes may repose with those of our friends and relations?" 3.

HYDROPATHY.

"But it is in chronic diseases, that is, diseases without any evident fever or inflammation, acute or subacute, that hydropathy flourishes, and its disciples exult; and yet it is in this very class of afflictions, large and multifarious as it is, that the 'water-cure,' as it is erroneously called, produces what its name expresses—the 'WATER-DISEASE'—and slays its thousands—not, indeed, in an open, obvious, and sudden manner, but in a slow, insidious, and masked character, when the victim is totally unconscious of the precipice to which he is advancing, and over which he will inevitably be hurled. Those who have seen most of human maladies, are well aware that the *causes* of chronic diseases, as the very word (chronic, from *chronos*, time) imports, are slow and gradual in implanting themselves in the constitution, and, when once fixed, are equally, if not more slow in their removal. In fact, it is known to every practitioner of experience that not one chronic disease in ten can be cured at all, and that the most we can expect is a mitigation of suffering. But there are certain classes of maladies—for instance, gout, rheumatism, rheumatic gout, tic douloureux, &c., which, though thoroughly constitutional, and whose *causes* have been years accumulating, are yet of a migratory nature, suddenly shifting their seat from a vital to an unimportant organ, and, *vice versa*, from a foot or a wrist to the stomach or heart. Now, it is an undoubted fact, that when a translation or metastasis of a chronic or sub-acute affection, as of gout or rheumatism, suddenly takes place from the exterior of the body, whether spontaneously or by the force of medicine, the malady takes up its seat in some internal organ;—but as internal organs, as the heart, liver, brain, &c. are not naturally sensitive of pain, the metastasis is very often taken for a cure, and the malady preys for a long time on a vital part, without suspicion, till it reaches a certain height, when the disease not only reveals itself, unequivocally, by pain and suffering, but is now totally beyond the power of art!! Nature will not be cozened by the ingenuity of man. For a long time she counteracts the deleterious effects of morbific causes, whether applied by ourselves, or unavoidably occurring, and guards vital organs by throwing the onus on external parts, as is familiarly exemplified in gout. But, when we thwart these salutary efforts of Dame Nature, by violently repelling the pain, inflammation, stiffness, or swelling from the hands and feet, by cold applications, heroic doses of colchicum, &c. then we lay the foundation, directly or remotely, for serious or even fatal maladies of some of the internal viscera! In this drama HYDROPATHY is now playing an important part, and we are now in almost daily habits of seeing the precious fruits of the 'water-cure,' in the shapes of furuncles, carbuncles, dropsy, and hypertrophy of the heart—internal abscesses, and other grave consequences. These, however, will not be heeded—at least they will not make much impression on the public, till some great personage dies suddenly under the Hydropathic process,

when the bubble will burst, and the 'Water-cure' shrink within its natural and *salutary* boundaries. I say *salutary*; because, in a large class of patients, labouring under dyspeptic, hypochondriacal, and nervous complaints, the early hours, the abstinence from wine and other stimulants, the vigorous exercises and the external and internal use of water itself, may prove more efficacious than medicine, indolence, and repletion at home. But let those who are subject to rheumatism, gout, erysipelas, tic douloureux, or any migratory disease, beware of the wet sheets, the plunge into cold water while perspiring, and the enormous ingurgitation of cold water, if they wish to avoid enlargement of the heart, chronic inflammation of the lungs, congestion of the liver, dropsy of chest, or the affliction of Job!" 160.

Case of Section of Tendo-Achillis, of Adductor Longus, of Sartorius and Rectus Femoris, and of Tendon of Psoas and Iliac Muscles, in the same Subject. By Joseph Sargent, M.D., of Worcester.*

The division of muscles and tendons is on the decline in this country. In Box's Essays, a racy account is given of the epidemic passion for gas-lights and plate-glass, that affected successively the gin-shopkeepers, chemists, linen-drapers, and house-decorators of the metropolis. The rage amongst the surgeons for dividing tendons has been just as frantic and unaccountable. Sober people looked on and wondered what could be the matter, whilst gentlemen were running about town, brandishing tenotomes of all shapes and cuts, and poking them into persons' eyes, heels, necks, and buttocks, with equal determination and impartiality. The influenza raged violently for a time, but its virulence has sensibly abated in London, and it has lapsed into a harmless and chronic state.

Over the water, however, it is otherwise. Our American friends have suffered from the disease in its aggravated form, and the symptoms have been peculiarly distressing. Nor are they yet altogether subdued. Restlessness and previgilium, an irresistible impulse to tenotomise, and a hallucination with regard to the benefits obtained by the unfortunate patients, are the prominent symptoms of a malady which at the very least is still subacute.

In a case before us Dr. Sargent gives the following account of his exploits.

April 27th.—"I divided the tendo-Achillis by the common sub-cutaneous operation, cutting from above downwards. The twitching of muscles of calf, to which patient had been so long accustomed, continued for several hours after the operation, and was painful. It then ceased, and patient became unusually quiet."

May 3d.—"Patient doing well, I divided the abductor longus, at a distance of about an inch and a half from the pubis—entering knife from inside of femur and cutting downwards. A small artery was divided, from which there was some hæmorrhage at the time of the operation. Patient continued well through first, second and third days after operation; and on the fourth was bound to a mattrass by a strap passing over his hips, confining pelvis, and one over each thigh, so as to keep these in extension and abduction as much as possible."

May 19th.—"Thigh being held in abduction and extension, I divided the sartorious and rectus femoris muscles, passing a tenotome, slightly convex on its edge, under the skin just behind and below the anterior superior spinous process of ilium, and sliding it about parallel with Poupart's ligament (so as to keep

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* The New England Quarterly Journal of Medicine and Surgery, No. 1, July, 1842.

the probable parallel of recurrent arteries) till it had passed inner border of rectus, and this was divided by passing in the knife a second time. The divided ends of the muscles parted to distance of two or three inches. There was some bleeding, and I tied up the hip in compresses and a snug bandage."

This would not do, and Dr. Sargent felt that nothing short of the tendon of the psoas and iliacus would suit him. The femoral artery might be divided, it is true, but what of that?

"The operation could leave the patient in no worse state than his present; and if successful, promised great results. Even if the femoral artery should be cut and have to be tied, the muscular tention might be removed at the same time, and the operation, at the worst, would be of a class with those performed even in our day, and by Dupuytren in torticollis, a deformity of infinitely less importance."

As the epigram on Dr. Lettsom says—

"If after that they choose to die,
What's that to me, I let's em."

June 19th.—"In presence of Dr. Green, Dr. Heywood, and Mr. B. F. Heywood, I passed in a pointed tenotome from outside of thigh, about an inch and a half below anterior superior spinous process of ilium, and slit it under the skin, in a direction parallel with Poupart's ligament, for the space of about three inches. Withdrew this and followed with probe-pointed tenotome; but I was in the field of last operation, and could not get through the close knit cellular tissue far enough. I had endeavoured to operate here so as to avoid the profunda and the recurrent arteries. Withdrew the knife, and commenced in same way about an inch and half below, and a little in front of last aperture. I kept my left thumb nail hard upon the edge of the femoral artery, a position which I had obtained for it while the thigh was in a state of flexion, and passed the knives in succession quite up to this nail. As the probe-pointed one reached it, I turned it so as to cut downwards, and Dr. Green made efforts in the way of extension. I trusted to the curve described by the blade as I turned it on the axis at the junction of the blade with the handle, for a progressive removal of the knife from the femoral artery. The section required considerable force, but the tension yielded after several cracks, at each of which Dr. Green said that he felt the limb, give considerably, except at the last, which brought the blade hard on to the bone, and was followed, on withdrawal of the knife, with a very large jet of blood, such as to quite bespatter the operator from head to food. Thick compresses were bound down over the incision, and a roller laid over the femoral artery and in its course, and confined by a firm bandage. Patient said that whole limb felt dead quite down to foot. A few hours after, when he had got over the fright from the operation, he said, 'how queerly it felt in my back when you cut the cord; it was all loose there, and now it goes right back.' His thigh too, he said, felt all free."

Of course there was trouble, hæmorrhage, extension, pain and all that sort of thing, but, bye and bye, the patient was put in "harness" and he got well enough to go home, and, as the operator *heard*, to "improve a good deal."

And so ends this eventful history, in which the patient was brought by the aid of art just to death's door, but not actually pushed through it.

MISCELLANIES.

SUMMARY OF THE WEEKLY TABLES OF THE MORTALITY FOR 1842:—METROPOLIS.

FROM these highly interesting and instructive Tables, we shall proceed to give some extracts.

The mortality in London during the past year amounted to 45,272, viz., 22,841 males, and 22,430 females, which, taking the population as it was in 1841, gives at the annual rate of mortality per cent. 2.381. From this it appears that the year has been, on the whole, healthy, the mortality being lower than in any of the previous years for which the number of deaths is given. The mean temperature has been high, viz. 52° 3′, the amount of rain in inches nearly 22, or considerably above the average. With regard to the influence of situation, we find, as in former years, the West districts to be the most healthy, next the North, then the Central, and finally the South and East districts, comprising Bermondsey, Southwark, Rotherhithe, Shoreditch, Bethnal Green, &c., in which the mortality amounted to nearly 2.5 per cent.

With regard to the influence of the seasons on the health, we find that the first quarter of the year, or that in which the mean temperature is the lowest, is most fatal, the number of deaths being 12,396; next to that, the last quarter, then the third quarter, and finally, as the most healthy, the second quarter, or that including the latter part of Spring and the beginning of Summer. From this we see that, while the very cold months are decidedly the most fatal, still the warmest months are far from being the most healthy, the fewest deaths occurring in that quarter in which the temperature most nearly approaches the yearly mean.

On examining more particularly the causes of death, we find in the first Table, consisting of epidemic, endemic, and contagious diseases, but little to notice; the greatest mortality occurred in the third and fourth quarters. Whooping-cough and croup proved most fatal in the early months; measles, scarlatina and typhus, in the latter months. November and December present the greatest number of deaths from erysipelas; diarrhœa, dysentary and cholera prevailed most in August and September. On comparing the number of deaths from these causes with the weekly average for 1838–9–40, we find a great diminution, the rate having been reduced from 204 to 148; this reduction taking place principally under the heads of small-pox, typhus and scarlatina, the weekly average for the former having fallen from 36 to rather less than 7; in the second, from 46 to about 22.6, and in the third, from 38 to 23.5. Diarrhœa, dysentery and cholera exhibit an increase.

In the second Table, consisting of the deaths from diseases of the nervous system, we see but little influence exerted by the temperature or season of the year. The greatest number of deaths under this section is referred to convulsions, next to hydrocephalus, then to apoplexy, paralysis and cephalitis. The rate of mortality exhibits a slight diminution compared with that of previous years, having fallen from 151 to 144.3, the decrease being principally referrible to the head of *convulsions*.

The third Table consist of the diseases of the respiratory organs. Over bronchitis, pleurisy and pneumonia, the cold quarters exert the most fatal influence; in consumption, however, the case is changed, the Summer months are here the most dangerous; the times at which the greatest number of deaths takes place are April and May, and October; or, the periods at which the

greatest changes in the temperature usually take place. This Table shows a slight increase in the mortality of the year, as compared with previous ones, the weekly average having advanced from 366 to 389·2.

With regard to the mortality from affections of the circulatory system scarcely anything can be said, as 989 out of 1046 are comprised under the vague term "disease." The weekly average under this heading has increased from 18 to 20.

The next Table consists of diseases of the digestive organs. The greatest mortality occurs here in those months which are characterized by the highest degree of heat. The diseases which proved most fatal were gastro-enteritis, teething, and disease of liver. The mortality has increased this year from 60 to 65 per week.

The Tables of the deaths from diseases of the organs of generation, of locomotion, and of the integumentary system, present but little interest. The number who died in childbirth amounted to 321, from rheumatism, 119.

The diseases of uncertain seat include a great variety, such as inflammation, hæmorrhage, atrophy, debility, &c. Of these the greatest number of deaths, viz., 1750 are attributed to dropsy, 1148 to debility, and 870 appear as "sudden deaths." The ratio of the mortality has increased from 103 to nearly 110, the increase occurring principally under the heading of "debility."

To "old age" 3346 deaths are attributed, the greatest number occurring, as might have been expected, during the cold season. Intemperance, starvation, and violence account for 1267; and in 190 cases the cause is not specified.

In reviewing these Tables generally, we find that by far the greatest mortality is caused by diseases of the respiratory system, the number of deaths from these amounting to as much as 13,990, forming nearly one-third of the whole. Next in point of mortality come epidemic, endemic, and contagious deaths, accounting for 7696, or rather more than one-sixth; then diseases of the nervous system, number of deaths 7505, or about one-sixth; then diseases of uncertain seat, amounting to 5715; then diseases of the digestive organs, number of deaths 3396. To old age are attributed 3346; to intemperance, starvation and violence, 1267; diseases of the circulatory system, 1046; of the organs of generation, 445; of the urinary organs, 323; of the organs of locomotion, 280; and of the tegumentary system, 73.

Compared with the average of the years 1838-9-40, the mortality has decreased from about 48,150 to 45,272. The decrease taking place principally in the cases of epidemic, endemic, and contagious diseases, and also, though to a less extent, in diseases of the nervous system. Under most of the other headings, a slight increase has taken place.

In conclusion, we wish to express our satisfaction at the accurate and careful manner in which these Tables are drawn up, forming, as they do, a most valuable and interesting addition to our statistical knowledge of disease.

THE INDIAN MEDICAL BOON.

For some years past, the Medical officers of the Indian Establishments have been petitioning the authorities at home for what is termed, "The Boon:" meaning pension for length of service, such as in 1837 was granted to the officers of the Indian Army. This boon, however, on some pretence or other was withheld, and probably would have continued to be withheld for a long term of years, but for the unceasing efforts of Mr. Martin, of the Bengal Medical Establishment, who, from the moment of his arrival in England, set to work to place the matters of the boon, as well as the condition of the Medical Service generally, in their proper lights before the authorities. This was no easy affair, as all who

have attempted to work their way through the great public offices of this Metropolis well know. But Mr. Martin succeeded at last—he obtained the following scale of pensions, for officers who previously, and whatever their length of service, possessed but £191. 12s. 6d. per annum:—

After 28 years' service (3 years' Furlough included)					£300.	a year.
„ 32	„	„	„	„	365.	„
„ 35	„	„	„	„	500.	„
„ 38	„	„	„	„	700.	„

Now, as compared to the Military boon, it is certain that, in respect to the time of service which entitles to pension, the Medical officers stand at disadvantage, especially when we consider that these last enter the service at a more advanced period of life. The omission of increased pension also, for Medical officers of 21 years' service, seems unjust and impolitic; yet, these are points that, we are assured, a little time and a proper representation will cause to be rectified, so as to place the two services on a footing of equality.

That "the boon" should appear to many to fall short of their just expectation, we can readily imagine; but still *it is a boon*, and will be felt by many to be so. The older surgeon will readily understand in this expensive country, the difference between £191. 12s. 6d. and £700. per annum. But that this grant should be considered in the strange light which is exhibited in the letters of some of our Indian correspondents, does somewhat surprise us. We should be sorry to characterize, in terms they deserve, the lucubrations of some of our friends, and still more sorry should we be to publish their letters, for we are certain that, such publication would be the very severest punishment we could inflict on their authors. To take one sample out of many:—a gentleman writes us to request that we publish an article of our own, that should have the effect of keeping the promotion in Bengal low, retaining that of Bombay high!—of lowering the price of provisions in Bombay!—of lowering the rate of mortality at a certain station there!—of reducing the rate of wages for domestics; and he concludes by telling us that, the Court of Directors of the East India Company "insultingly call" the recent increase of pension "a boon!!" We are sure that a little information and some little reflection will satisfy any one of our brethren in India that, no credit or profit can ever accrue from representations of this sort.

What they have really to do is, first, to inform themselves as to what ought to be done to render their departments efficient; and, secondly, to unite in the endeavour to bring the thing about. The Indian Medical Establishments are full of able men. Let these take the direction of affairs on the spot, and matters will soon be concluded to their satisfaction at home.

But there are some points that ought to be insisted upon in their petitions, and which we beg to submit for their consideration:

1st. That whilst the Military officer may retire in his 24th year of service, and aged 40, on a pension of £292., the Medical officer of 24 years' service, and aged 46, has but a pension of £191.; and whilst a Military officer of 28 years' service may retire on Lieutenant-Colonel's pension, a Medical officer is obliged to serve one year longer for the same pension.

2d. That, to bring the two services to something like a par, as to retiring pensions, the following scale would seem an equitable one for the Medical department:—

Years of Service.	Pensions.	Age of Retirement.
17 years	£191. 12s.	39 years of age.
21 „	290. „	43 „
25 „	365. „	47 „
29 „	450. „	51 „
32 „	500. „	54 „
35 „	700. „	57 „

3d. That, by the existing scale of retiring pensions for the two services, there is a difference of three years in the lowest scale, in favour of the Military officer, and in two others of the scales there exists a difference of seven years respectively in favour of the Military officer; and this, although he enters the service six years earlier in life, and receives pay in India during the whole of the time that the Medical officer is undergoing at home a laborious and expensive course of preparation for his responsible duties—duties on the right performance of which the very existence of modern armies mainly depends.

4th. That the rank, without the pay, of Major, conferred on Medical officers of 30 years' standing, is a positive injury. Increased rank is no where so sure to entail increase of expenditure as in India; and, all things considered, it is hoped the circumstance has only to be brought to the notice of authority to secure for the Medical officer the rank and pay of Major at a period of life somewhat corresponding, and judged by the average ratio of promotion in the Army.

These and other points, well known to our brethren in the East, should be briefly and emphatically insisted upon. Hitherto the Indian petitions and memorials have been very much wanting in that compactness so necessary to secure attention here; and, it is owing to the brevity of Mr. Martin's representations, which he urged forward by every influence he could command, as well as by great personal exertions, that he has obtained a hearing from the authorities; but it is lamentable to think that, whilst Mr. Martin was struggling with difficulties at home for the good of his brethren in India, and that in a manner which those alone can appreciate who have had to carry points with persons in authority, or through the great public offices of this metropolis, the old men, his official superiors in Bengal—the three dull-brained constituted heads of the Medical Department of the Army—that inert mass of obstructiveness—the Board—were busying themselves in the miserable manner here described:—(*Vide Lancet, March 11th.*)

"INSUBORDINATION AT THE MEDICAL BOARD."

"There is a somewhat novel state of things, regarding the members of the Medical Board, at present under the consideration of the higher authorities, and which, immediately relating to the question of Military uniform, involves the higher one of Military authority. We shall relate one of the several accounts (not substantially varying) which we believe to be the most correct. Not very long since, Mr. Sawers, the senior member, considered of a sudden that, as there was a uniform for the Medical Staff, that uniform should be worn at all meetings of the Board, and he mentioned this desire to the other, or junior members, Doctors Campbell and Smith, and said, at the end of a fortnight (allowing that time for the uniforms to be prepared) they should appear accordingly. They considering this as a proposition rather than as an order, voted against it, and intimated to Mr. Sawers that his motion was negatived by the majority.

"He made no remark whatever upon this result, and such meetings as next ensued were attended in the old way—plain cloth coat, or white jacket, according to the 'warm feelings' of the respective members—until the first meeting occurred after the expiration of the fortnight's law, when, on Dr. Campbell's entering the office in a white jacket, Mr. Sawers, who was himself in undress uniform, ordered him to go home, and consider himself in arrest for disobedience of orders.

"Home he went accordingly, and there he has remained in arrest ever since, and charges have been sent in against him by Mr. Sawers, grounded on his recusancy. These charges are before Government and the Commander-in-Chief, and we understand it is not found an easy matter to decide how 'they should be dealt with.'"—*From the Calcutta Newspapers.*

MEDICAL BENEVOLENT FUND SOCIETY OF IRELAND.

We received the following paper merely in time to make an extract from it, and to cordially recommend the subject to the serious attention of our professional brethren in Ireland.—*Editors.*

"*Dublin, Thursday, May* 26, 1842.

"A meeting of 'medical gentlemen, favourable to the establishment of a Benevolent Fund Society,' having been called by requisition, the following members of the profession assembled in the Examination Hall of the College of Surgeons, at one o'clock, P.M, viz:—

"Sir Henry Marsh, bart., Mr. Carmichael, Mr. Wilmot, Dr. Graves, Dr. O'Beirne, Dr. Jacob, Dr. J. Jacob, Maryborough; Mr. Collis, Dr. Shekleton, Dr. Kingsley, Roscrea; Dr. Ferguson, Mullingar; Dr. Walsh, Naas; Dr. Blackley, Armagh; Dr. Corbett, Innishannon; Dr. Sherwood, county Wicklow; Dr. O'Grady, Dr. Duncan, sen., Dr. Duncan, jun., Dr. Benson, Dr. Harrison, Dr. Mollan, Dr. Hargrave, Dr. Brady, Dr. Macdonnell, Dr. Clinton, Dr. Harvey, Mr. Williams, Dr. Stuart, Dr. Fitzpatrick, Dr. Stephens, Mr. M'Entire, &c., &c.

"Sir Henry Marsh was moved to the chair, and Dr. Benson was requested to act as secretary.

"The first resolution was moved by Dr. Kingsley, and seconded by Dr. Graves—

"Resolved—That the formation of a Medical Benevolent Fund Society, similar to that which is connected with the Provincial Medical Association of England, is loudly called for by the casualities to which our profession is exposed.

"Dr. Kingsley said, Mr. Chairman and gentlemen, I don't think I could advocate the first resolution, which I have the honour of proposing, better, than by drawing the attention of this highly respectable meeting to the annual report for 1840 of the Society for the Relief of the Widows and Orphans of Medical Men in London and its vicinity. This charitable institution has been in active operation for more than fifty years, and was established by the benevolent exertions of but seven members of the medical profession. Commencing with a very limited number of subscribers, and consequently with a very slender income, it has gradually assumed such an importance, and attained to such a degree of prosperity, as place it upon a level with some of the most influential charities of the metropolis; the funded property of the society amounting now to nearly forty-five thousand pounds, enables the directors to distribute, with the aid of annual subscriptions, above fifteen hundred pounds per annum, among thirty-one widows, fifteen orphans of deceased members, and one aged and distressed member. The degree of relief afforded by the society to its pensioners has, of course, varied with its means; the present allowance is £35 per annum to a widow, provided her income from other sources does not exceed £50 a year; to each of her children under fourteen years of age, £12 yearly is allowed; and, under some circumstances, an apprentice fee is usually granted upon application. The sum of £26,066 5s. has been distributed among persons eligible to receive assistance. In 1810 it was found that, reckoning from the first establishment of the society, 97 of its members had died, and that the applications for relief from widows and orphans amounted to 21, so that nearly *one-fourth* of those who had died, left their families destitute, and consequently dependent upon the funds of this charity. It is devoutly hoped that a knowledge of such facts as these may influence the wealthier members of the profession, in Ireland, without exception, to join their humbler brethren solely from motives of charity towards their less fortunate brethren, in establishing, on a permanent and firm basis—'*The Medical Benevolent Fund of Ireland.*' It is still more to be desired

that members of the profession, just commencing their career, aware as they must be of the difficulties that beset their path, should contribute to the funds of a charitable institution, the advantages of which might, by *possibility*, be reflected back upon their own dearest connections, and more especially as the subscription is so small in amount, (one guinea annually,) as scarcely to be an object of consideration to any one in practice. This union of prudence and benevolence, in supporting a charitable institution, could hardly fail to afford comfort to themselves, and be approved of by their friends. These views of the utility of the society chiefly apply to the members of the medical profession, but to the wealthy and charitably disposed of all classes of the community, some considerations may be addressed in behalf of this charity, particularly as the real condition of the profession seems to be little, if at all understood by persons unconnected with it. Those who look only on the surface of society, and who hear of the large fortunes accumulated by a few successful medical practitioners, may think that the practice of the medical profession is at once the sure and ready road to independence and wealth; but the appalling fact already stated, that *one in four* of the members of the society for the relief of the widows and orphans of medical men, &c., has left a widow, or orphans, claimant upon its funds, sufficiently disproves this opinion. The public generally appear to have no knowledge of the difficulties, and consequently, no sympathy for the struggles of men, who, bred with the notions and feelings of gentlemen, educated at a great expense, and obliged at all hazards to keep up an appearance of respectability, are compelled to wait quietly and silently for that employment, which they either may not obtain at all, or too late in life to afford them an opportunity of providing for their families. When it is also considered that the medical man is almost under the necessity of entering into the married state early in life, and that he is also more than ordinarily exposed to the chances of disease and premature death, it will not be a matter of astonishment, that so many respectable members of the profession of all classes, have been found to have their families unprovided for, their last days embittered by disappointed hope, rendered doubly poignant by the necessity of concealing their wants from the eyes of a hard judging world. When these circumstances are duly considered, can it be doubted that those who have it in their power to relieve real distress, and who must, in their own persons, or in those most dear to them, have experienced the restoration to health, or mitigation of disease, which the zeal aad assiduity of the medical profession has tended to effect—can it be doubted, that they will contribute their aid to the widows and orphans of the less fortunate practitioners, whose deaths are often caused solely by their unwearied endeavours to do good to their fellow-creatures? Neither must it be forgotten, that the widows who may apply for the relief, which I hope this society will soon be in a posture to afford, will be persons taken from the better educated classes of society, who would prefer enduring in silence the privation of their accustomed comforts, to urging their claims upon public charity by making known their distress. I will not trespass further on the time of the meeting, but will read the resolution I have the great pleasure of proposing."

On the Preparations of the Indian Hemp, or Gunjah, (Cannabis Indica), their Effects on the Animal System in Health and Disease, &c. &c. By W. B. O'Shaughnessy, M.D. 8vo. sewed, pp. 38, 1843.

The narcotic effects of hemp are extensively known in South Africa, America, Turkey, Egypt, Asia, India, Malay, &c. But in Western Europe its use and abuse are little known. The extraordinary symptoms produced by the Indian hemp, or bang, depend on a resinous secretion with which it abounds, and this

is totally absent in the European hemp. This difference appears to our author to depend on climate. The history and botanical characters of this medical substance are ably traced by the author, so is an account of its popular or intoxicating abuses. The bang is prepared by mixing powder of hemp with pepper, cucumber, melon seeds, sugar, milk, and water, when it is fit to make a man a beast.

"From this beverage intoxication will ensue in half an hour. Almost invariably the inebriation is of the most cheerful kind, causing the person to sing and dance, to eat food with great relish, and to seek aphrodisiac enjoyments. In persons of a quarrelsome disposition it occasions, as might be expected, an exasperation of their natural tendency. The intoxication lasts about three hours, when sleep supervenes. No nausea or sickness of the stomach succeeds, nor are the bowels at all affected; next day there is a slight giddiness and much vascularity of the eyes, but no other symptoms worth recording."

The natives of India have several preparations or forms of hemp, some of which they smoke instead of drinking.

Dr. O'S. made several experiments on animals, which showed that while carnivora and fish, invariably exhibited the intoxicating influences of the drug, graminivora, as the horse, deer, monkey, goat, sheep, cow, &c., experienced only trivial effects, even from the largest doses. These experiments encouraged him to try its effects on man. We shall glance at some of the cases treated, chiefly in the Clinical Hospital of the Medical College, Calcutta.

Cases of Rheumatism.—Two cases of acute, and one of the chronic form, were treated. In the two former, little relief had been obtained by the common modes of treatment—depletion, Dover's powder, antimonials, &c. The same with the chronic case. One grain of the resin of hemp, in solution, was given to each of the three patients. In two hours, one of them was reported as becoming very talkative—singing songs—calling out for extra supplies of food, &c. The other two remained unaffected, in four hours the first patient was falling asleep. In six hours he was found quite insensible, but breathing regularly. Of the other two patients, one was asleep, the other free from any symptoms of intoxication. On raising up the arm of the first patient, Dr. O'S. found it cataleptic—in short, the whole body was in this curious state. This condition obtained for a few hours, when consciousness and voluntary motion returned, and the patient was soon well. The third man, who resisted the effects of the hemp resin, was found to be a gunjah or hemp smoker by habit. They all recovered, without any bad consequences. An old muscular cooley, a rheumatic malingerer, was next experimented on, by the exhibition of half a grain of the hemp-resin. In two hours he became talkative and musical—sang songs—told stories—ate double allowance of dinner, and sought other indulgences not on the catalogue of hospital fare. All ended in sound sleep, and he was discharged next morning.

Hydrophobia.—A terrible case of hydrophobia was treated by the resin in question, and after five days' exhibition of largish doses—sometimes two grains every hour or two, the hydrophobic symptoms were overcome; but the unfortunate patient, (a native doctor himself), fell a victim to coma. As far as can be judged from this and some other cases of the kind, we are now likely to possess a *Euthanasia*, if not a remedy, for the most torturing as well as fatal affliction to which humanity is subject.

Some of the pupils at the hospital now began to experiment on themselves and others, with the hemp-resin. The results in some cases were highly ludicrous. We shall quote a sample.

"In one pupil, Dinonath Dhur, a retiring lad of excellent habits, ten drops of the tincture, equal to a quarter of a grain of the resin, induced, in twenty mi-

nutes, the most amusing effects I ever witnessed. A shout of laughter ushered in the symptoms, and a transitory state of cataleptic rigidity occurred for two or three minutes. Summoned to witness the effects, we found him enacting the part of a Rajah giving orders to his courtiers; he could recognise none of his fellow students or acquaintances; all to his mind seemed as altered as his own condition: he spoke of many years having passed since his student's days: described his teachers and friends with a piquancy which a dramatist would envy; detailed the adventures of an imaginary series of years, his travels, his attainment of wealth, and power: he entered on discussions on religious, scientific, and political topics, with astonishing eloquence, and disclosed an extent of knowledge, reading, and a ready apposite wit, which those who knew him best were altogether unprepared for. For three hours and upwards he maintained the character he at first assumed, and with a degree of ease and dignity perfectly becoming his high situation. A scene more interesting it would be difficult to imagine. It terminated nearly as suddenly as it commenced, and no headache, sickness or other unpleasant symptom followed the innocent excess."

The remedy was tried in cholera, by several practitioners, and with considerable success.

Traumatic Tetanus.—It was in this dire and generally incurable malady, that the hemp-resin and tincture evinced the most salubrious effects. Many cases are detailed, and a great majority were saved. In this class of diseases, the doses were raised to two or three grains, every two or three hours. The remedy was tried, with more or less effect, in some cases of infantile convulsions, delirium tremens, &c., for which we must refer to the paper in question. A sufficient supply of the extract and tincture, prepared from the fresh hemp-tops, may be had at Mr. Squire's, in Oxford-street, who will enable the medical officers of public institutions to give a fair clinical trial to this remarkable and potent, though, it appears, safe medicinal agent. We fear that the Indian hemp will, from some cause or other, prove less effective in this than in its native climate; but the facts brought forward, with so much industry and candour, by Dr. O'Shaughnessy, are deserving of immediate attention and extensive trial, especially by hospital physicians and surgeons.

MESMERISM; ITS PRETENSIONS AND EFFECTS, &c. BY JOHN BROWN, M. D. OF BOSTON, LINCOLNSHIRE. 1843.

The Mesmero-mania has nearly dwindled, in the metropolis, into anile fatuity; but lingers in some of the provinces, with the *gobe-mouches* and chaw-bacons, who, after gulping down a pound of fat pork, would, with well-greased gullets, swallow such a lot of mesmeric mummery as would choke an alligator or a boa constrictor, A worthy disciple, and operator on a narrow scale, (Mr. Small,) has been exhibiting, in his shop at Boston, to a gaping multitude, and with a merry-andrew, whom he has had in *training* for some time. The following passage from Dr. Brown's brochure contains enough of this mesmeric farce:

"A gentleman at one of Messrs. Small and Sharp's public exhibitions said, 'Why do you always exhibit the same person? take one of us;' when Mr. Small replied, 'would it be reasonable to expect as much from an untrained horse, as a trained one?'. Thank you, Mr. Small, the cat is out of the bag; *training* is the word which expresses all the wonders of Mesmerism.

"Part of the exhibition now consists in Mr. Small sitting down to parody his own miracles: he shuts his eyes, holds out his hand with a glass in it, and has a copper cap fired off, without flinching or starting. 'There,' says he, 'I can do all these, and I should think John an impostor myself, if he did no more; but

I shall now exhibit to you an experiment, which you must all, I am sure, deem decisive;' John is now made to stand up in his sleep, blindfolded, a small circle is cleared around, Mr. Small takes off his shoes, puts himself in attitude, waves his hands about, walks backward round and round, and John follows: this decisive experiment has been daily exhibited, to the wonder of visitors who cannot make it out, and believe it to be magnetic attraction, but every one ought to see that really there is no attraction in it, for as the two performers approach near to each other, the attraction, instead of increasing, ceases; when Mr. Small stands still, John stands still, because John knows very well that the next step would incommode Mr. Small: John is a well trained performer; an accomplished performer, and well deserves the shillings he picks up at private exhibitions. On John being asked if he could follow Mr. Small on saw-dust, he said 'he could follow Mr. Small very well on a boarded floor, but neither he nor any one else could follow him on saw-dust.'"

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2. Les Bains de Brousse (en Bithyme, Turque d'Asie,) avec une Vue des Bains, &c. &c. Par C. A. BERNARD, M. D. Constantinople. 1842.

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5. On Gravel, Calculus, and Gout, chiefly an Application of Professor Liebig's Physiology to the Prevention and Cure of these Diseases. By H. BENCE JONES, M. A. Cantab. &c. Octavo, pp. 142. Taylor and Walton, London. 1842.

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11. A System of Clinical Medicine. By ROBERT JAMES GRAVES, M. D. one of the Physicians of the Meath Hospital, &c. &c; Octavo, pp. 638. Fannin and Co., Dublin. 1843.

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13. On Diseases of the Bladder and Prostate Gland. With Plates. Third Edition, revised and corrected. By WILLIAM COULSON. Longman and Co. Jan. 1843.

14. Appendix to the Reports regarding the Royal Infirmary of Edinburgh, 1841—and also for 1842. Compiled by THOMAS BEVEL PEACOCK, M.D.

☞ *These Reports, entirely tabular, appear to be carefully and ably prepared by Dr. Peacock.*

15. Observations on the principal Medical Institutions and Practice of France, Italy, and Germany, with Notices, &c. By EDWIN LEE, M.R.C.S. Second Edition, 1843. Churchill. London.

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☞ *We hail with pleasure this new contemporary, which appears to be ably conducted. We shall notice some of the articles in our Periscope.*

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21. Criminal Jurisprudence considered in relation to Cerebral Organization. By M.B. SAMPSON. Second Edition. Highley, 1843. pp. 147.

22. A guide to the Urinary Cabinet; being concise Directions for a Chemico-Pathological Examination of the Urine and Urinary Concretions, &c. &c. By ROBERT VENABLES, M.D. &c.

☞ *This Urinary Cabinet, containing the instruments, necessary tests, &c., may be seen at Messrs. Knight and Sons, Foster Lane, London.*

23. Interment and Disinterment; or a further Exposition of the Practices pursued in the Metropolitan Places of Sepulture; and the Results as affecting the Health of the Living, &c. By G. A. WALKER, Surg. (Re-printed from the Morning Herald.) Octavo, pp. 28. London: Longman and Co. 1843.

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26. On the Preparations of the Indian Hemp, or Gunjah (Cannabis Indica), their Effects on the Animal System in Health and Disease, &c. By W. B. O'SHAUGHNESSY, M.D., Bengal Army. 1843.

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28. Mesmerism; its Pretensions and Effects upon Society considered. By JOHN BROWN, M.D. &c. Boston, (Lancashire.) Feb. 1843. Eight Pages.

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31. Observations on an Act (5 and 6 Victoria, c. 123) for amending the Law relating to Private Lunatic Asylums in Ireland, &c. With Comments, &c. By WM. HARTY, M.D., Physician to the Prisons of Dublin. pp. 49. Dublin. March, 1843.

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37. A new Theory and Treatment of Disease, founded upon Natural Principles. By JOHN TENNION, M. D. Machlachlan and Stewart, Edinb. 1843. Pp. 35.

38. Animal Magnetism and Homœopathy, with Notes, &c. By ED. LEE, Esq. Third Edition.

☞ *Mr. Lee has wheeled round and embraced Mesmerism, after writing against it ! ! We need say no more !*

39. On the Preparation of Extracts by Spontaneous Evaporation, assisted by a Current of Dry Air By Mr. W. HOOPER, of Pall-mall East. (*Read before the Pharmaceutical Society.*)

☞ *The apparatus for preparing these extracts cannot be described in words, but is represented by a wood-cut in Mr. Hooper's ingenious communication.*

40. Nineteenth Annual Report of the Visitors of the General Lunatic Asylum, County and City of Gloucester. 1842.

41. Fourth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England. 8vo. pp. 361. Clowes, 1842.

42. The Life of a Travelling Physician, from his first Introduction to Practice; including Twenty Years' Wandering, &c. &c. Three Vols. 8vo. Longman & Co. 1843.

EXTRA-LIMITES.

Removal of a Dropsical Ovarium, entire, by the Large Abdominal Section. By *D. Henry Walne*, Esq.

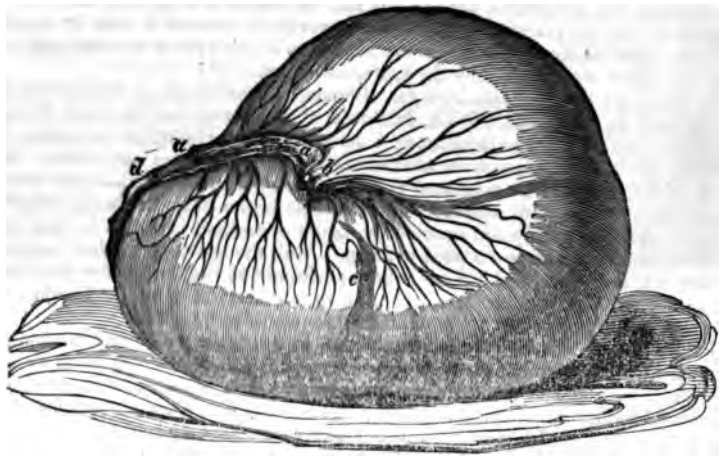
It is now about twenty years since Dr. Blundell advanced the opinion that "extirpation of the ovarian cyst in scirrhus combined with dropsy, or in simple dropsy," would as an operation, "ultimately come into general use." He was enabled, however, to refer to two cases only, in both of which what may be termed the minor operation was performed, the incision into the abdomen being only about three inches in extent, and the tumour having been previously reduced in bulk by tapping the cyst. One of these, in which some adhesions of the cyst to the omentum existed, and which were divided by the knife, recovered.

Not long after the publication of Dr. Blundell's researches, it became known that, as early as the year 1809, Dr. M'Dowal of Kentucky, had successfully performed one operation for extirpation of a diseased ovary, making an extensive incision into the abdomen, and soon afterwards two nearly similar operations. Mr. Lizars, of Edinburgh, who published these accounts, published at the same time a full narrative of his own unsuccessful attempts in the same direction, coupled, however, with one triumphant case of the major operation, in which he had succeeded in removing a large diseased ovarium. Still the operation excited but little attention in this country, and had never been performed in England, before Dr. Clay, of Manchester, in September last, operated on his first case, nor in London, till November, when the author operated in the case about to be related.

Mrs. F——, æt. 58, applied to Mr. Walne in July last with great abdominal enlargement. The catamenia had ceased four years. Had given birth to five living children, and had several times miscarried. A rounded prominence of the abdomen, circumscribed, with fluctuation, and moveable as a whole, was found on examination: the health was good; no signs of general dropsy. She had observed her gradual increase of size for more than two years; it had, however, given her no pain. Mr. Walne immediately pronounced the case as one of ovarian disease, and, after consulting with Dr. Blundell, determined to extirpate the diseased ovarium by the large abdominal section. Mr. Walne's reasons for choosing the major operation were these—that it does not appear that a less extent of wound diminishes the danger of the operation in any material degree, if at all; and that the complications which occasionally present without being foreseen, and which, indeed, do not admit of being foreseen in every instance, can be more suitably dealt with by the surgeon, through a free opening than through a small one.

On the 6th of November, the operation was performed. The patient was placed on a couch, with her feet upon the ground at its end, and her back supported by pillows. An exploratory incision of the integuments and tendinous expansion, and then of the peritoneum, to the extent of an inch and a half, was first made; a finger was then passed into the peritoneal cavity, and the fluctuating cyst distinguished clearly. The incision was then enlarged from above downwards, to the length of thirteen inches, extending from three inches below the scrobiculus cordis to within one and a half of the pubes, avoiding the umbilicus. The tumour, which proved to be of the right ovary, now advanced gradually through the wound; Mr. Walne then, having given the tumour in

charge of an assistant, inserted two fingers behind the broad ligament, and with a needle passed a double ligature behind the pedicle, and thrusting the needle through the middle of that part, brought its point forward. The two halves of the pedicle were then tied separately, and the tumour cut off, immediately in front of the ligature—the enormous mass of more than 16lbs. was now removed, no adhesions whatever interfering. At this period the patient became very sick, and made repeated efforts to vomit, but nothing was brought up. Dr. Freund had been in charge of the divided integuments, and closed them over the abdominal viscera, securing the intestines from exposure to air as much as possible. When the retching efforts had ceased, as there was general oozing rather than any other form of bleeding, it was determined to tie the pedicle in its entire circumference; this was accordingly done; bleeding ceased, and the integuments brought together by about a dozen interrupted sutures. Long pads of lint were laid down each side of the abdomen a little way from the wound, and strips of plaister carried over them from one side of the body to the other.



At the conclusion of the operation the pulse was 76, she was however pale and cold: hot water was applied to the feet, and an anodyne administered. No unfavourable symptom occurred till the second night, when she became hot and restless, and was sick two or three times. On the following evening, she complained of much uneasiness, and suffered from vomiting and occasional eructation of wind. These symptoms were relieved by anodynes. On the following day the sickness had ceased; the tongue was moist and cleaner, and the skin perspiring.

11th. Has not had so good a night; vomiting had twice occurred. On dressing the wound, it was found that the ligatures which had been left out about two inches from the pubic end of the wound, were no longer visible; they had probably been pulled within the wound in one of her fits of restlessness. In the course of the day the tongue became brown and coated, the manner drowsy, and the mind confused; constant nausea, vomiting, hiccup, and pain at the naval; symptoms resembling those of strangulated hernia. These were however relieved by the use of anodynes, enemata, &c.

13th. The wound was dressed, and the remaining sutures removed: adhesive matter covered those parts which were not closed, and which, at three points

together, amounted to less than three inches. In the afternoon, she was again seized with symptoms resembling those of incarcerated hernia, and on raising one of the strips of plaster, it was found that one of them had been too tightly applied, lying over a part of the wound not yet quite closed, where intestine was liable to pressure. On removing this piece of plaster, she felt sick and faint, but immediately after was much relieved. This circumstance Mr. Walne considers of importance, as showing that it is not so much peritoneal inflammation, as suffering in the viscera of the abdomen, more particularly the intestines, which is to be apprehended as a consequence of free incision for the removal of diseased ovarium.

From this time she continued rapidly to improve: on the 23d she sat up for several hours, and on the 29th she felt quite well; the wound was healed, except a small opening at the lower end where the ligatures were lying, and one point by the umbilicus of redundant granulation of the size of half a pea.

The greater portion of the mass removed was fluid, contained in one or more cysts. A substance of about the size of two fists, having at some points a scirrhous hardness and abruptness of form, occupied that part of the tumour where the remains of the Fallopian tube, meandering towards its fimbricated extremity sufficiently declared it to be the ovarium of the right side, much enlarged and changed in structure. The fluid is of the ordinary character of ovarian dropsical fluid, and the solid portion is probably of a scirrhous character; the tumour, however, has not been cut into, Mr. Walne considering that "the disease as nearly in its actual form and size at the period of its removal, as it could be preserved, is more valuable for the surgical illustration of the subject, than when cut into slices for pathological ends, as has been done by hundreds such, to which no other history than that of their fatal influence on the frame that bore them, attaches."

"NOTE.—The ligatures of the pedicle, which had not come away when the paper went to press, remaining with very little change of position, and being in vain pulled at every other day, on the 6th of January were twisted gently into the form of a cord till resistance was felt, and slight pain excited. They were then fixed in their twisted state by plaster. This proceeding was renewed on the 8th; and on the 10th of January, about ten weeks after the operation, they were drawn out without pain or resistance. In a few days the canal they had occupied closed, and the patient's cure was perfected.

"I was not aware at the time of drawing up the particulars of my own case, that the operation had been performed by Dr. Granville. It appears, however, that that gentleman operated on successfully in 1827, and that he had attempted a similar operation in the previous year, but, on finding extensive adhesions, desisted by the advice of those about him. No professional account of the completed operation was ever published. Of the other I find a brief notice in a medical journal of the period."

Guilford-street, Russell Square.
Jan. 30, 1843.

THE SYDENHAM SOCIETY.

PROSPECTUS.—The Sydenham Society has been founded for the purpose of meeting certain acknowledged deficiencies in the diffusion of medical literature, which are not likely to be supplied by the efforts of individuals.

It will carry this object into effect by distributing among its members—

1. Reprints of standard English medical works, which are rare and expensive.
2. Miscellaneous Selections from the ancient and from the earlier modern authors, reprinted or translated.
3. Digests of the most important matters contained in old and voluminous authors, British and foreign, with occasional biographical and bibliographical notices.
4. Translations of the Greek and Latin medical authors, and of works in the Arabic and other Eastern languages, accompanied, when it is thought desirable, by the original text.
5. Translations of recent foreign works of merit.
6. Original works of great merit which might be very valuable as books of reference, but which would not otherwise be published, from not being likely to have a remunerating sale,—such as classified Bibliographies, and alphabetical Indexes to periodical publications and other valuable and voluminous works.

The Society will consist of an unlimited number of members.

The subscription constituting a member is one Guinea annually, for which he will be entitled to a copy of every work printed by the Society during the time of his subscription.

The subscriptions are to be paid in advance; and no member is responsible beyond the amount of his subscription.

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The Society will not commence its operations until the number of its members amounts to five hundred.

The works of the Society will be printed for members only; on a uniform plan, and with a good legible type.

The Society will be under the direction of a Council of twenty-four members, elected at the annual general meeting from the subscribers at large; and of this number eighteen only will be re-eligible for the following year.

The President and Vice-Presidents will also be elected annually.

As the expense of management will be very small, nearly the whole of the funds subscribed will be devoted to the publications; and as the proportionate cost of producing books decreases as the number of copies increases, it is anticipated that, when the Society is fully organized, the annual supply of works to members will be considerable.

The great success that has attended other Societies established on similar principles, and with like objects,—as the Camden, the Parker, the Percy, &c.* leaves no room for doubt as to the eventual prosperity of the Sydenham Society. It would indeed be strange, if Medicine, which boasts of a literature more extensive than that of any other art or science, and of cultivators as numerous, zealous, and learned, as any other department of human knowledge, should fail in attaining an end which has been so speedily and so fully accomplished by the societies referred to, and by others embracing even less comprehensive objects.

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Gentlemen desirous of becoming members are requested to forward their names to the Provisional Secretary, W. G. Burroughs, Esq. at the Treasurer's, 31 George Street, Hanover Square, or to any member of the Provisional Council.

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* The present number of subscribers to the Parker Society for publishing theological works, exceeds 7000. The number of members in the Camden is limited to 1200, and that number has long been complete.

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